THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.
Entered at the Post-Office of New York, N. Y., as Second-Class Mail Matter.

VOL. LXVIII. NOVEMBER 18. No. 21.

RICHARD P. ROTHWELL, C. E. M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
THE SCIENTIFIC PUBLISHING CO., Publishers.

SUBSCRIPTIONS are PAYABLE IN ADVANCE For the United States, Mexico and Canada, $5 per annum: all other countries in the Postal Union, $7.
REMITTANCES should be made by bank drafts, post office orders or express money orders on New York, payable to the Scientific Publishing Co.
When change of address is desired, both old and new address should be sent.
NOTICE OF DISCONTINUANCE.—The JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received by us. We find that a large majority of our subscribers prefer not to have their subscriptions interrupted, and their files broken in case they fail to remit before expiration. It is therefore assumed unless notification to discontinue is received, and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.)
London Cable Address—"PULCHRITTO." " " " " "

Branch Offices: **Chicago, Ill., 737 Monadnock Building, Phone 73 Harrison.**
Denver, Colo., Boston Building, Room 206.
Salt Lake City, Utah, Atlas Building.
San Francisco, Cal., 207 Montgomery Street.

City of Mexico, 104 Ave. Madrid. Robt. S. Barrett, Manager.
Victoria, B. C., Office, 28 Broad Street. Wm. M. Brewer, Manager.
London, Eng., Office, 20 Bucklersbury, 368. R. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar. net.

CONTENTS.

	Page
Union Copper Mining Company	601
Basin Gold and Copper Mining Company	601
Zinc Ore Prices	601
Transvaal Gold	601
The Russian Crisis	601
The Jones Mixer Patent	601
Coeur d'Alenes Rioters' Sentences	602
Manganese Ore Shipments from Leadville, Colorado	602
Recent Gold Movements	602
New Publications	603
Books Received	603
Correspondence	603
* The Atlin District in British Columbia — W. M. Brook	605
Abstracts of Official Reports	606
New Gas Engines for Mining Purposes	606
Recovering a Bore-Hole — W. J. Cousins	607
Recent Decisions Affecting the Mining Industry	607
* Recent Practice in Magnetic Separation in Sweden, H. C. McNeill	608
Prospecting by Shafts	610
The Slate Industry of the United Kingdom	610
A New Duplex Air Compressor	611
The Use of Vats in Place of Zinc Boxes in the Cyanide Process, W. A. Caldecott	611
* The Collis Steam Valve	612
Questions and Answers	612
* Patents Relating to Mining and Metallurgy	613

* Illustrated.

Personal..... 615
Obituary..... 615
Societies and Technical Schools..... 615
Industrial Notes..... 615
Trade Catalogues..... 616
Machinery and Supplies..... 616

Mining News.
United States:
Alabama..... 616
California..... 616
Colorado..... 617
Georgia..... 617
Idaho..... 618
Indiana..... 618
Michigan..... 618
Minnesota..... 618
Missouri..... 618
Montana..... 619
New Mexico..... 619
New York..... 619
Oregon..... 619
Pennsylvania... 619
Tennessee..... 619
Washington.... 619
Wisconsin..... 616
Wyoming..... 619

Foreign:
Australasia..... 620
Canada..... 620
Mexico..... 620

Markets.
Coal:
New York... 620
Birmingham.. 620
Pittsburg..... 620
Slate:
New York.... 621

Chemicals and Minerals:
New York.... 621
Liverpool..... 621

Metals.
Iron:
Pig Iron Production..... 622
Birmingham.. 622
Buffalo..... 622
Cleveland..... 622
Philadelphia.. 562
Pittsburg..... 622
New York.... 623

Gold and Silver Prices, Statistics, Imports and Exports 623
Foreign Coins 623
Copper..... 624
Tin..... 624
Lead..... 624
Spelter..... 624
Antimony..... 624
Nickel..... 624
Platinum..... 624
Quicksilver... 624
Minor Metals. 624

Assessments.. 628
Dividends..... 628
Meetings..... 628

Mining Stocks.
Market Reviews:
New York.... 625
Boston..... 625
San Francisco. 625
London..... 625
Paris..... 625

Stock Quotations
New York.... 626
Philadelphia.. 626
Salt Lake City 626
Boston..... 626
Colo. Springs. 626
Spokane..... 626
Denver..... 627
San Francisco 627
Toronto..... 627
London..... 627
Paris..... 627
Mexico..... 628
Rossland, B.C. 628

Mining Co's.
List of..... 629

Current Prices:
Minerals, Chemicals, etc..... 630

Advt. Rates.. 20
Advertisers' Directory..... 15, 17, 18, 19

We have just received an inquiry from France for coke for blast furnace use. Not less than 50,000 tons will be required, and from that quantity up to 100,000 tons will be taken, if it can be supplied. We shall be pleased to receive correspondence on this point. The demand for coke in France is pressing, and some furnaces have been obliged recently to shut down, because they were unable to secure supplies.

The Basin Gold and Copper Mining Company of Montana, which has sold considerable stock in the East, and has done a large amount of advertising, was organized to buy and develop the Hope Mine, at Basin, in Jefferson County. The company has had a small force at work some weeks, and now, according to Montana papers, has come into full possession by paying $45,000 cash to Receiver Wilson of the First National Bank of Helena. Those who contemplate buying Basin Gold and Copper Company stock will do well to compare the company's capitalization of $2,500,000 with the value thus placed on its sole asset.

The price of zinc ores in the Joplin Region has, as we anticipated, been reduced still further, sales having been made of standard—60 per cent.—zinc ore at $35 a ton; and a still further fall is looked for. The price is now about the same as it stood a year ago. At this level, or lower, there is still plenty of chance for those who are working mines bought or leased on the reasonable terms which prevailed up to the time the boom began. The fall will be trying, however, to those who have bought properties at boom prices and capitalized them upon the supposition that zinc ore would bring $45 for an indefinite time

The decrease in gold from the Transvaal this year will be small. A return was received for September, and this shows that the production reached, during the nine months ending September 30th, a total value of $69,516,973. This is only $8,553,788 less than the output for the full year 1898, and is $12,798,294 more than the total for 1897. The September statement is the last which will be received this year. It is understood that the Ferreira, and probably one or two other mines are being worked under charge of Transvaal officers; but the Government will take the gold and probably no accurate return of its amount can be secured. The sum above named may be taken approximately as the Transvaal output for 1899. The apparent decrease will be much more than made up by the increases in other countries to which we have recently referred.

The disturbance in gold supply and in the money markets has been largely due to imagination. It has never before happened that a war should stop at once the output of a large gold-producing country; and this unusual circumstance produced such a strong impression that it is not strange that the real effects should be exaggerated.

Russia is now going through an industrial crisis, which is partly the result of too rapid expansion and partly of financial causes outside of the Empire itself. During the past two or three years very large amounts of foreign capital have been invested in Russia, and a great number of companies have been started—coal, iron, oil and manufacturing concerns. Comparatively few Russians are stockholders, since the great mass of the people have nothing to invest, and moreover the people are agricultural by habit and training, and do not take to manufacturing as a rule. Many of the companies, whose enterprises have been started, have relied on the French and German banks for financial aid. The German banks, however, have had recently all that they could do at home, on account of the expansion of business, and have generally withdrawn their loans; while many of the French banks have followed their example, for political reasons and uncertainties at home. The sequence in Russia has been the collapse of many companies and a general uncertainty about the others. Mines and works are stopped in many places because it is impossible to get money for current expenses; and there is much suffering among employees where factories have shut down. The Government has given some aid, but its efforts have been too late to prevent serious disturbance. It looks very much as if a reconstruction of the whole system would result.

The controversy over the Jones mixer patent has been finally settled, the United States Supreme Court having refused to entertain an appeal from the decision of the Circuit Court of Appeals in the case. This confirms the decision of the last-named court to the effect that the Jones patent cannot be enforced, except as to certain details, since the use of a mixer or reservoir of molten metal had been anticipated by previous inventors. This final settlement is of importance to steel manufacturers, as it will permit the use of the mixer without the necessity of securing licenses from the Carnegie Company, which owns the patent.

The mixer is a device which is essential in the continuous process of making steel which is now employed in many large works, and

which is also used in many cases where the pig iron is remelted before going to the converters. In the continuous process the molten metal from the blast furnace goes to the converters in a liquid state, and is made into steel at a single operation, with great economy in time and fuel. The mixer is used not only to insure a continuous supply of raw metal for the converters, but also to enable the operator to regulate the quality of the iron, as the metal from several furnaces can be conveyed into the mixer, which in fact derives its name from this use. The device was described and the patent specifications given in the "Engineering and Mining Journal" for October 1st, 1898.

Some of the members of the Coeur d'Alene Miners' Union, who in April last were concerned in the destruction of the Bunker Hill & Sullivan Mill, have met with a punishment which does not seem by any means a severe one. Thirteen of the rioters were tried in the United States District Court, the specific offense with which they were charged being not the destruction of the mill, but the stoppage and forcible seizure of a train carrying the United States mail. The jury convicted 10 out of the 13, the evidence as to the remaining three being insufficient to prove their active participation. The court promptly sentenced nine of the men to 22 months' imprisonment and $1,000 fine each; the tenth receiving only 20 months' imprisonment, though he is also fined the full amount. These sentences are very nearly up to the full limit fixed by law, and the court in imposing them doubtless took into account all the circumstances of the case. The condemned prisoners will be promptly sent to the prison at San Quentin, California, where they will have to serve out their time.

These convictions and sentences will doubtless have a salutary effect in the district. They will tend distinctly to re-establish government, strengthen the law and order party and assist in the final overthrow of the mob rule which has so long disgraced the Coeur d'Alenes and hindered the growth and development of the district. It is to be hoped that the Idaho State authorities will persist in their determination to maintain order in the region.

MANGANESE ORE SHIPMENTS FROM LEADVILLE, COLORADO.

The activity which now exists in the Leadville Mining District in Colorado is marked, and few districts are making a better showing at the present time. This prosperity is not entirely dependent on the silver-lead and gold ores which have given the district its reputation. We recently noted a shipment of manganese ore from Leadville to South Chicago; and this is only part of a constant movement of this product now aggregating 10,000 tons per month, which began upward of three years ago. The greater part of the ore shipped has averaged over 25 per cent. manganese, some of it running as high as 35 per cent. At present it is going out as low as 17 per cent., this lower grade carrying a high percentage of iron. Deposits of manganese ore of great extent are known to exist on Carbonate, Fryer and Iron Hills in Leadville, and much territory supposed to contain this ore on these hills remains to be explored.

The ore is sold to the Illinois Steel Company, the Carnegie Steel Company and the Colorado Fuel and Iron Company, the shipments going to Pueblo, South Chicago and Pittsburg.

Various bases of purchase have been made, one of which is $3 a ton f. o. b. Leadville, for ore carrying 28 per cent. manganese and 24 per cent. iron, 8 cents per unit penalty when manganese falls below 28 per cent., and 10 cents per unit premium for manganese above 28 per cent.; for iron, 8 cents per unit penalty or premium for all below or above 24 per cent. The Carnegie Company paid 18 cents per unit for manganese f. o. b. Leadville, which would give about $5 a ton for 28 per cent. ore. For phosphorus a penalty is usually charged when it exceeds 0.50 per cent.

Among the mines there that are heavy producers of manganiferous iron are the Seneca, the Star Consolidation, the Last Chip, the Wallace and the Modoc. Other claims are known to contain bodies of this ore.

Transportation is arranged for by purchasers. Only first class labor is employed in these mines, the lowest wage being $3 per day. The extension of railroads recently to all these districts cuts off a wagon haul charge of from 40 to 60 cents per ton, increasing the inducements to the miner.

The opening up of markets for this ore in the past three years has had an excellent influence on the argentiferous iron product of Leadville. It has cut off manganese ore purchases by Colorado smelters and induced them to pay more liberally for the silver-bearing and chloride ores.

General George W. Cook is heavily interested in this production, having a number of active producers at all times for over a year past. He it was who recently sent a special train of 40 carloads—over 1,200 tons—to South Chicago, giving it every publicity in order to demonstrate that Leadville is a large producer of valuable manganese ores, and to call public attention to its extent.

RECENT GOLD MOVEMENTS.

We have recently shown that the production of gold during the year 1899 has been large, and that the total output for the current year will undoubtedly exceed that for 1898, notwithstanding the temporary stoppage of supplies from the Transvaal. It is certain also, though exact figures cannot be obtained, that the proportion of the output which has been coined this year and has gone into circulation directly, or into bank reserves as a basis of paper issues, has been greater than is usually the case. The great activity of business all over the commercial world has caused an unprecedented demand for money, which has been largely supplied from the new production; while the war reserves held by several of the European governments have been drawn upon by payments for new ships and war supplies of all kinds. These conditions have produced some movements of gold which are a little out of the usual order. The statistics accessible are not sufficiently complete to give a comprehensive view of these, but will throw at least some light upon them.

The United States has not been a large importer of gold this year, though there is a large trade balance due the country abroad. The surplus of gold imports over exports for the ten months to the end of October has been only, in round figures, $6,800,000, and the inflow of gold, which has been anticipated several times during the year, has not taken place. This has been largely due to the high rates for money in Europe, which have made it more profitable to keep balances there for the time than to transfer them to this country. Even the present so-called stringency of which so much is made on Wall Street and State Street, is more apparent than real, and affects only the speculators; the demands of current business being met at rates which are not high in a time of active trade.

The Treasury Department estimates put the amount of gold coin in the United States at the end of October at approximately $875,050,000, of which $240,800,000 was held by the Government and $634,250,000 was nominally in circulation. It is probable that this estimate is too high, as the Department does not make sufficient allowance for private shipments and withdrawals of coin; but the fact remains that the amount of gold in the country is larger than ever before. It is not actively in circulation, except on the Pacific Coast, and the greater part of it appears only in bank reserves and perhaps in private hoards. Large as the amount is, it can probably be increased by at least $100,000,000 in case of necessity, through drafts on our foreign balances.

The cessation of gold shipments from South Africa has affected English exchanges only in a temporary way, and gold is being drawn from other sources. The production is not entirely stopped, as it is understood that five of the mines are at work under charge of Government officers. The gold produced is taken by the Transvaal Government, however, and will only make its appearance abroad as the Government has opportunities of buying the supplies which it needs.

The temporary deficit is being made up to a small extent from the European Continent and perhaps from Canada, but chiefly from the Australian colonies, which in the early part of year shipped very little gold to England, in spite of their large increase in production. In the eight months of the year ending with August the exports of gold from five of the colonies—excluding Queensland and New Zealand—amounted to $43,650,000, of which only $15,900,000 went to England. Of the balance $9,160,000 went to the United States and $12,090,000—a most unusually large amount—to India; while shipments of $6,500,000 are reported to the Cape of Good Hope. The last named item, however, might be practically included in the shipments to England, since it doubtless took the place of an equal amount which must otherwise have been sent from London. This movement and that to India are exceptional, the only explanation of the latter being that the Indian Government has been quietly accumulating a gold reserve wherever possible, in view of intended currency changes.

The closing months of the year will doubtless see some interesting currents and cross-currents in those movements; and the commercial movement of gold for the complete year will be an interesting study. The cost and delay involved in these shipments are another reminder of the value and convenience of the International Monetary Clearing House suggested some years ago in our columns—the establishment of which will doubtless be one of the reforms of the Twentieth Century.

NEW PUBLICATIONS.

"Ohio Society of Surveyors and Civil Engineers; Transactions of the 19th and 20th Annual Meetings." Columbus, Ohio; published for the Society. Pages, 232. Price, 75 cents.

The Ohio Society of Surveyors and Civil Engineers is an active body, and many interesting papers are presented at its meetings. Most of them seem to have received close attention from members, judging by the discussions and occasional criticisms which followed the reading of different papers. At the 20th annual meeting, besides the president's annual address, reports were presented by the officers and by committees on legislation, on municipal engineering, and on land drainage.

The papers read covered the subjects of land surveying, drainage, sewerage of towns and cities, street pavements of different classes, water supply and purification, interurban electric roads, and road improvement and maintenance. These will indicate very well the range of topics which the society studies, and nearly all of the papers represent excellent work.

"Poor's Manual of the Railroads of the United States; Thirty-second Annual Number, 1899." New York; H. V. & H. W. Poor. Pages, 1,502, with maps. Price, $7.50.

The gradual growth and development of "Poor's Manual" have been interesting to those who have followed it from year to year. For a number of years past it has very fully and fairly summarized the condition and operations of the railroads of the United States, and the summary, or introduction, has been the best and most nearly complete statement attainable of the general results. In recent years further additions have been made to it, giving the reports of city and street railroads; those of a number of miscellaneous corporations, and brief statements of the financial condition of the United States, the several States, and the chief municipalities. It is a volume of financial information which is indispensable to bankers, investors and railroad men generally. To foreigners it seems strange that so important a work should have been left to private enterprise; but the success which has attended it shows how much can be accomplished by private initiative in this country. "The Mineral Industry" is another instance of this, and its growth and importance have been on lines parallel to, though in a somewhat different direction from that of "Poor's Manual."

"Bericht uber die aus anlass des Funfzigjahrigen Bestandes des Oesterreisches Ingenieur und Architekten Vereines Veranstituten Festlichkeiten." Vienna; published for the Society. Pages, 104; illustrated.

This handsome illustrated book contains an account of the proceedings attending the jubilee or fiftieth anniversary of the foundation of the Austrian Society of Engineers and Architects. The anniversary properly occurred near the end of 1898, but was postponed to the present year, in order that the formal celebration might coincide with that of the fiftieth anniversary of the accession to throne of the present Emperor Franz Joseph. The book gives an account of the proceedings at the anniversary meeting with the addresses made at that time, and also several interesting and valuable papers, showing the advance made during the half century in architecture and in the different branches of engineering, such as railroad construction, mining engineering, municipal and sanitary engineering, electrical engineering, electro-chemistry, mechanical engineering, and finally in technical instruction. The illustrations show many notable buildings, bridges and other constructions erected during the 50 years under the direction of members of the Union. The Society has grown notably in numbers and influence from the first small beginnings when a few members constituted the entire list; and its papers and transactions constitute a most creditable record.

"The Copper Mining Industry and the Distribution of Copper Ores in New South Wales." By J. E. Carne. Sydney, New South Wales; Government Printer. Pages, 200; with maps and illustrations.

This volume is No. 6 of the "Mineral Resources of New South Wales," a series issued by the Geological Survey of the Colony, as a branch of the department of mines and agriculture. The report deals in considerable detail with the history of copper mining and copper smelting in the colony. All the known cupriferous deposits of New South Wales are described. Many of them were inspected by Mr. Carne personally, and in other cases the notices are based upon reports heretofore made by other officers of the Geological Survey. An introduction contains the general matter relating to copper ore occurrence, smelting and other methods of treatment, while a short chapter speaks comparatively of the copper mines found in the other Australasian colonies and some famous mines in other countries. The greater part of the book is devoted to the account of the different copper districts. These are more numerous than is generally supposed, the gold output of the colony being so well known as to rather throw in the shade its wealth in other minerals. The descriptions of the different mines and copper-bearing deposits have been carefully prepared and give many interesting details.

A supplementary chapter gives accounts of the fire-clays and other refractory material used in making fire-brick, furnace linings, etc., and reference is also made to limestones and other fluxes used in smelting. The monograph is an excellent one and will be of much interest and value to miners and investors in New South Wales, as well as in other countries.

"The Chemistry of Soils and Fertilizers." by Harry Snyder. Easton, Pa.; the Chemical Publishing Company. Pages, 278; Illustrated. Price, $1.50.

This little volume contains much general information about the origin and physical and chemical composition of soils, the changes induced by cultivation, the various manures and chemical fertilizers, and the food requirements of crops. The author, as professor of agricultural chemistry at the University of Minnesota, and chemist of the Minnesota Agricultural Station, has availed himself of the great mass of detailed information that has been compiled by careful observers in this country and abroad, regarding the requirements of vegetable life and the dependance of all animals, including man, on the breaking down of the rocks of the earth's crust. The book takes up—after a brief introduction, referring to the work of Davy, Liebig, Lawes and Gilbert—the physical properties of soils, clay, sand and silt, and the adaptation of various soils to various crops. Then follow chapters on the formation of soils, their mineral elements and chemical composition, mention being made of the alkali soils, and their improvement, and the importance of humus and its loss through forest and prairie fires and by cultivation. The nitrogen needed for plant growth, whence and how it may be obtained, is pointed out and the various nitrogeneous fertilizers are described. The importance of phosphorus as plant food is emphasized, and the various forms in which phosphoric acid can be applied to the soil, as commercial superphosphate, basic slag, etc., are mentioned. The sources of soil potash are described, and mention is made of the occrrence of the Stassfurt salts, at present the chief source of the world's supply of potash. The amount of lime in the soil, and the importance of this element to vegetable growth, are taken up, and a long chapter treats of the preparation of commercial fertilizers, their composition and proper use. The subject of the rotation of crops is treated at length and its importance is emphasized. The book is not an exhaustive treatise, but is more for popular reading or for the use of students in agricultural schools, and as such possesses decided merit, its statements being clear, concise, and resting on good authority.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Report of Lecture on the Deep Leads of Victoria, and Some Indications of Ore Deposits." By E. Lidgey. Melbourne, Australia, 1898; Government Printer. Pages, 9.

"Geological Survey of Victoria—Department of Mines. Progress Reports Nos. IX, X and XI." Issued by James Travis, Acting Secretary for Mines. Melbourne, Australia, 1898; Government Printer. Price (in New York), $1.75 each.

"Map of the Warrior Coal Basin, with Columnar Sections of Formation so far as it carries Workable Coals." By Henry McCalley, Assistant State Geologist. To accompany the Report on the Warrior Basin. University, Ala., 1898; State Printers.

"Dictionary of Electrical Engineering and Chemistry: III. Spanish-German-English." By Pablo Heyne, assisted by Ernesto Sanchez-Rosal. Dresden, Germany; Gerhard Kuhtmann. Pages, 218. Price (in New York), boards, $1; cloth, $1.60.

"United States Commission of Fish and Fisheries: Bulletins Nos. 409 to 416, inclusive." "List of Fishes known to Inhabit the Waters of the District of Columbia and Vicinity." By Hugh M. Smith and Barton A. Bean. "Notes on a Collection of Tide-Pool Fishes from Kadiak Island, in Alaska." By Cloudsley M. Rutter. "The Southern Spring Mackerel Fishery of the United States." By Hugh M. Smith. "Notice of a Filefish new to the Fauna of the United States." By Hugh M. Smith. "The Pearly Fresh-Water Mussels of the United States; their Habits, Enemies and Diseases; with suggestions for their Protection." By Charles T. Simpson. "The Mussel Fishery and Pearl Button Industry of the Mississippi River." By Hugh M. Smith. "The Peripheral Nervous System of the Bony Fishes." by C. Judson Herrick. "The Reappearance of the Tilefish." By Hermon C. Bumpus. Washington, D. C., 1899; Government Printing Office. Pamphlets.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Cape Nome District, Alaska.

Sir: In the "Engineering and Mining Journal," October 21st, I saw a brief note on Cape Nome, Alaska, and as I spent the summer there from June 21st to September 17th, I will try and add a little to your knowledge of that region.

The beach is low, an average of 150 to 225 ft. from grass to sea water, and is of auriferous sand. There is a thin strata of reddish mineral stained sand close to the surface, nowhere more than 20 or 24 in. down. The strata may have been schist at some time. It extends from Port Clarence to Golovin Bay, and runs out under Berings Sea, also back under the grass in places.

I have known men to take out and retort $600 worth of gold in a day with the aid of a rocker. It is richer in some places and generally very fine gold, though pieces as large as $1 in value are often taken out. This strip of beach is common ground and all work without specific boundaries or trouble. There have been no blanks; all get some, while many have done remarkably well. The claims set in at the edge of the grass and extend back 5 and 6 miles to the hills or mountains. The ground is gently undulating and there are many small lakes of water on this flat.

There are many creeks and rivers; some are very rich. No gulch or creek claim was worked out during the past summer, but as much as $200,000 was taken from claims on Snow Gulch and Anvil Creek.

The country is strewn with quartz float everywhere, as much on the mountain tops and sides as in the gulches and creeks. There is from 5 to 10 ft. of dirt over everything except a few of the higher points. Quartz blisters are visible where bed rock has been exposed, and I am sure some good ledges have been located.

On No. 2 claim, on Swan Gulch, the chimney was uncovered by the placer miners; the opening or crater was from 2 to 4 ft. wide and filled with a sulphurous smelling mud. The sides were worn slick as glass by the matter blown out from the interior. No bottom was found with a 10-ft. iron rod. A very fair prospect was taken out of the hole, when boxes were moved up and the crater filled with tailings. The gold from the creeks and gulches in the mountains is worth $18.50 an ounce, and the gold from the beach $16 at the United States assay office at Seattle.

The quartz is very heavy, resembling spar; white, with black, cloudy parts, and plenty of iron. There is also a great deal of iron pyrites. I think it is a good country; there is no condition that is difficult to overcome by a miner, and it can be reached by an all-water route.

The weather during my sojourn was mostly cold, rainy weather, with an occasional few hours of sunshine. Grass in the interior (the hills) grows in abundance, and is the best. No timber.

What do you think about the beach gold?

Benjamin F. Henry.

Tacoma, Wash., Oct. 30, 1899.

Utilizing Heat from Slag—Saving in Smelting.

Sir: I notice in your valuable paper of October 28th an editorial stating that "Readers would do great service to us and to their fellow workers, by sending us from time to time, some notes of their experience," so we send you the following description of some of our own experience here, knowing that it will be of great interest to owners of sulphide properties, who have ores too low grade in value to pay freight and smelting charges, while it would cost them too much to erect a smelting plant, if roasters were required and fine crushing machinery. A simple proposition like direct smelting (where suitable flux can be obtained) would be just what they need to make their property a good paying proposition, especially when so little fuel would have to be hauled in for use in their blast furnaces. We speak from experience, having had our hot air arrangement at these works in operation for nearly one year, and the following statement was made up by our bookkeeper in comparison with previous runs before introducing our present system of smelting. On one 48-in. round furnace, on a basis of 80 tons of ore and flux, in 24 hours, there was saved the cost of roasting and bricking of 60 tons at $2 per ton, $120; 4 tons of coke, at $8, $32; a saving of $152 per day, which did not include the greater saving made by having cleaner slag and requiring less labor.

The advantages of this larger matte settling arrangement are obvious, especially where one could obtain water for granulating the slag. In this case there would be no danger of mechanical loss of matte. The construction of our plant was simple and comparatively cheap, costing us less than $1,500 for the arrangement suitable for two blast furnaces, which included new bustle pipes, valves, cast-iron settlers on wheels, brick-work and everything complete; and the repairs since starting have been practically nothing. The slag receivers or settlers remain in constant use without changing from four to eight weeks at a time, and are then changed perhaps for other reasons than the fault of the settlers. At the time we introduced our hot air arrangement, we had several thousand tons of iron and zinc sulphide concentrates, containing about 40 per cent. sulphur and 2½ per cent. wet copper, which had accumulated on our hands. Two roasters had not been capable of roasting a sufficient supply for one blast furnace, but after introducing our hot air arrangement, we were not only enabled to shut down both our roasters, still handling the same amount of concentrates, but we were enabled to purchase and smelt more sulphide ores.

Our large and well regulated hot settling arrangement also enabled us to discontinue saving any shells, as we found them free from any of the globules of matte which are usually carried over with the slag mechanically. In addition to saving the expense of running our roasters, we were also able to reduce our coke to about one-third the amount we had formerly been using, and could no doubt get along with less were we able to obtain sufficient sulphur in the ore we are smelting. In fact, we find that it would be practically impossible to have too much sulphur in the charge when the iron and zinc are properly taken care of with the necessary silica. We have read a description of several hot air or pyritic smelters, especially one where they utilized the heat above the feed floor. They then passed the blast into a heating oven or stove, where they use fuel to make the blast hotter, at considerable expense for building this stove and for the fuel required to keep it in operation. Now cooling off the stack above the feed floor with blast is an excellent idea, and has been in use for some time, but after drawing the blast out of the hot air jacket above the feed floor, we can pass it through our hot-box arrangement set in position and enclosed over our slag receiver or matte settler, where the same confined heat passing up through the tubes of this hot-box and around it and then back underneath the settler, not only heats the temperature of our blast sufficiently hot for all purposes, but also prevents the bottom and side of our settler from getting too cold. With a good smokestack, which gives us the benefit of a good draft, regulated with a damper, we can draw as much heat as we wish back underneath our large settler; and should it get too hot, we make a small opening in the brick wall, allowing cold air to enter, which soon stops any danger of burning out.

S. E. Bretherton.

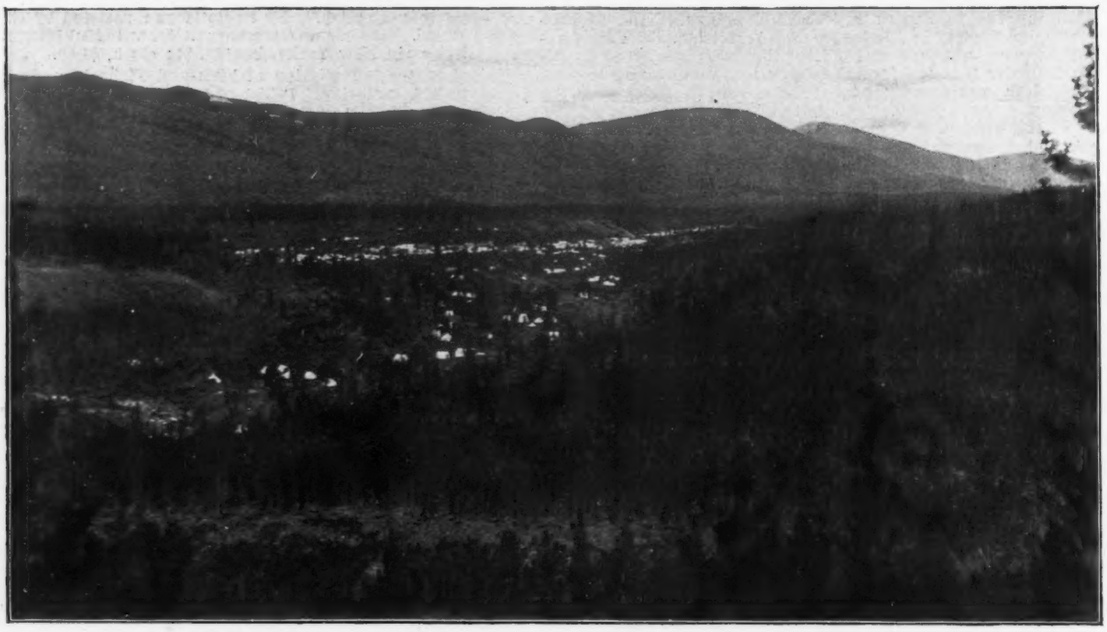
Silver City, N. M., Nov. 4, 1899.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—Imports of fuel into Spain for the nine months ending September 30th, were 1,181,238 tons coal and 165,155 tons coke. Imports of metals included 1,907 tons pig iron, 4,282 tons wrought iron, 17,807 tons steel and 380 tons tin plates. Exports of minerals are reported by the "Revista Minera" as below, in metric tons:

	1898.	1899.	Changes.
Iron ore	5,134,301	6,537,653	I. 1,403,352
Copper ore	669,566	735,422	I. 65,856
Zinc ore	44,359	70,422	I. 26,063
Lead ore	5,623	7,651	I. 2,028
Salts	163,021	275,421	I. 112,400

Exports of metals included 29,877 tons pig iron (34,777 tons, 1898); 21,194 tons copper (23,595 tons, 1898); 120,673 tons lead, against 133,702 tons last year.

MAGNETIC PROPERTIES OF IRON-ALUMINUM ALLOYS.—In a paper read before the Physical Society in London recently, Dr. S. W. Richardson said that observations were made upon four alloys containing respectively 3.64, 5.44, 9.89 and 18.47 per cent. of aluminum. The alloys were used in the form of anchor rings, and were wound with primary and secondary coils separated by asbestos paper. The temperatures used ranged from 83° C. to 900° C. The low temperatures were produced by the rapid evaporation of ether surrounded either by ice and salt or by carbon-dioxide snow. The high temperatures were obtained either electrically or by gas muffles. In both cases the actual temperatures were deduced from the resistance of the secondary, which was made of platinum wire and wound next the metal. The author employed Maxwell's null method of measuring mutual induction, increasing the sensitiveness by the introduction of a secohmmeter making about three revolutions per second. In order to test the accuracy of the method, some of the experiments were repeated with a ballistic galvanometer in the ordinary way, and the agreement obtained between the results in the two cases was well within the limits of experimental error. The chief conclusions to be drawn from the experiments may be summed up as follows: 1. The alloys behave magnetically as though they consisted of two distinct media superposed. 2. The general roundness of the curves and their lack of abruptness near the critical point seems to indicate that the alloys are heterogeneous in structure. 3. The permeability decreases with rise of temperature near the critical point, until a minimum value is reached, when further rise of temperature produces very slight diminution, if any, in the permeability. 4. The experiments suggest that the maximum value of the permeability for an alloy containing 10 per cent. of aluminum is reached at about 90° C. 5. An alloy containing 18.47 per cent. of aluminum has a critical point at about 25° C., and gives no indication of temperature hysteresis. This alloy probably has a maximum permeability much below 90° C. The author has found that at high temperatures there is a second maximum in the induction curve. This maximum becomes less and less noticeable as the field is increased.



View of Discovery on Pine Creek, Atlin District, from Stevendyke Benches.

THE ATLIN DISTRICT IN BRITISH COLUMBIA.

Written for the Engineering and Mining Journal by W. M. Brook.

The development of the Atlin Division in the Cassiar Mining District of British Columbia has been greatly increased by the cheap transportation rates given by the White Pass & Yukon Railroad from Skaguay to Bennett and by the John Irving Navigation Company in competition with other small steamboats running on the lakes. It costs now less than 5c. per pound to land freight at the Atlin warehouses from salt water. Two years ago, during the Dawson boom, it would have cost 10 times as much.

Last year there was scarcely any mining done in the Atlin country to speak of, for the season was well advanced before the public learned of the new discovery on Pine Creek.

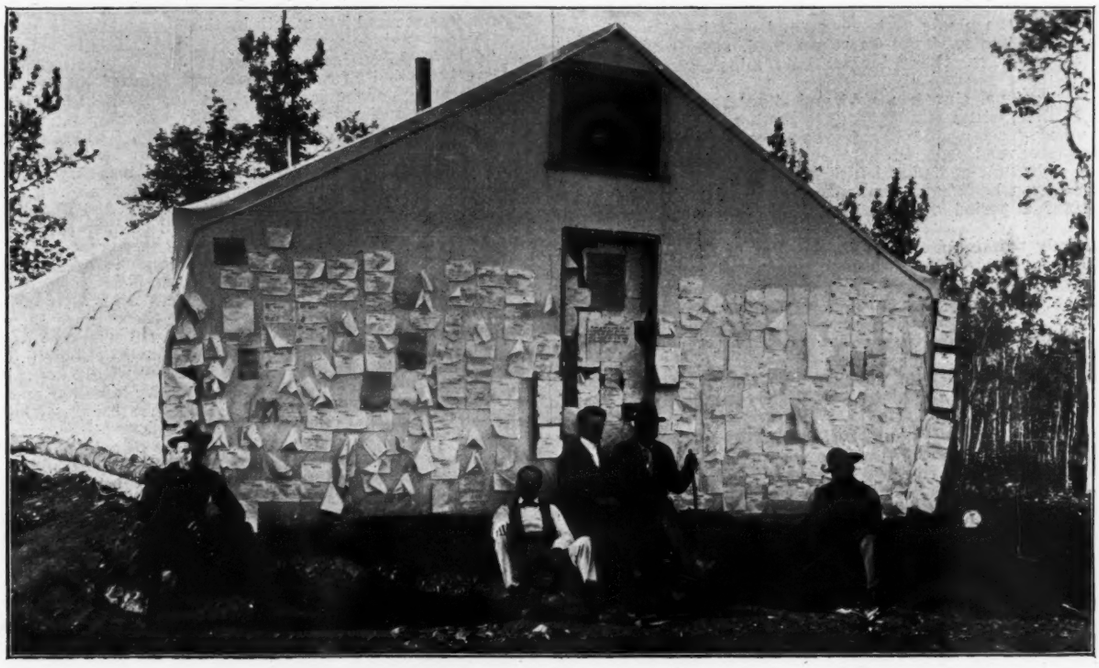
According to the estimate of Mr. Weir, who reported on the Atlin District for the Mining Department of British Columbia, the output of 1898 did not exceed $75,000, while this season there has been, in round numbers, probably between $750,000 and $1,000,000 taken out. As will be inferred from the following official report, a very large percentage of the Atlin gold has been extracted from the country where the mines have not paid the royalty; that on which royalty was paid, was in ounces: April, 1,329; May, 264; June, 152; July, 2,904; August, 4,220; September, 5,757; total for 6 months, 14,626 oz. Since September the collection of royalties has been much closer and more general.

The entire region known as the Atlin Gold-fields, where auriferous gravel is found, bears evidence of being covered at some remote period with a vast system of glaciers. A closer examination of the features of this country establishes the fact that the northwesterly trends so remarkable for their regularity, in the region of the Upper Columbia, are here carried out in all the geological and physical details. It will be seen by making a study of the maps of Western Canada and Alaska that the same gold belt which extends through the Kootenay, Cariboo, Omenica, Lower Cassiar and Juneau districts, covers the Atlin camp and continues on, taking in the Klondike and penetrating the Yukon Basin beyond Munook.

The superficial deposits found here are divided into those of pre-glacial and those of post-glacial age. Where the boulder clay is present it separates these two classes of deposits, of which the first mentioned may be included in the latter territory, while the second class are described as pleistocene, and are, no doubt, largely made up of the rearranged material of the older beds as well as that of the boulder clay. Both classes of deposits are largely represented by gravels; sands and silts are also present. The old pre-glacial channels of the streams are usually filled up to a considerable depth by tertiary deposits and in these gravels of the valleys most of the highly auriferous ground has been discovered. The actual channels of the old streams contains the richest accumulations of coarse gold. The gold worked in the beds of the present streams is generally associated with the post-glacial gravels, and deposits of the same character and age form benches or terraces. The larger ones may be seen on Spruce Creek and that part of Pine between Discovery and Lake Atlin.

The accompanying view of Discovery City was taken from some of the higher benches of the Stevendyke, an old channel of Spruce Creek. So far as at present developed the richest auriferous creeks in the district are those entering Lake Atlin from the east and northeast, the

THE TOWN OF ATLIN, BRITISH COLUMBIA.



GOLD COMMISSIONER'S OFFICE AT ATLIN, BRITISH COLUMBIA.

principal ones being Pine, Spruce and McKee. It is from these creeks that most of the gold has been mined this season. While bed-rock is generally very deep on these creeks, there are limited areas on each that may be characterized as shallow diggings, and these have formed the center of activity up to this date. The deeper portions will be exploited by the hydraulic system, and some large companies, backed by English, Canadian and American capital, are now being organized to develop them on a great scale. Indications are everywhere present that there are a series of quartz ledges cutting across the country in a general north and south direction which have formed the source of the gold found in these streams. These are expected to be uncovered by the hydraulic companies when they get to work.

The valley of Pine Creek, three miles in width, contains two ancient river channels, known as Sunset and Stevendyke gulches, running parallel to the main stream on the right and left hand sides, respectively. These channels become marked a short distance below Discovery and run for several miles towards Atlin Lake.

Sunset Gulch will be exploited by an English company in which Lieutenant-Gov. McInnes, Mr. Clifford and others will be largely interested.

Stevendyke Gulch is considered by experts a valuable concession owing to its being the channel of the old river formed by the junction of the Pine and Spruce Creek systems. Prospecting shafts show the gravel to be auriferous to a great depth. This proposition, in which Frank Weir, representing Eastern Canadian capital, and Jonathan Miller, a prominent Dominion official on the Pacific Coast, are interested, will commence operations immediately on the reopening of the season.

W. W. Hill of Juneau, a Philadelphia capitalist, who recently acquired a valuable tract on Upper Spruce Creek, will put in a first class hydraulic plant to operate it. Another valuable property on Spruce has been secured by W. H. Lynch, representing Montreal parties who are already heavily interested in Kootenay and Boundary mines. Mr. Lynch was one of the earliest in the district last season, being on his way out from Dawson on a confidential mission for the Dominion Government when the Atlin strike first became known. The McKee Creek hydraulic ground is being developed by the Dunsmuirs of Victoria, the colliery owners.

A French syndicate represented here by Count De La Mar has bonded a group of 16 leases, 80 acres each, on Boulder, a tributary of Pine, and will spend $20,000 in preliminary prospecting work before the opening of the mining season, July 1st, 1900.

As a hydraulic proposition, the Atlin District is undoubtedly one of the most promising lately discovered. Equal to the Cariboo fields now being developed, it will have the advantage of from 20 to 25c. per pound in the matter of freights, and the ease with which machinery of every description can be taken from salt water will render it a formidable rival to the mineral areas of Southern British Columbia when the lode development has reached the operating stage. The country rock is the typical Cariboo slate, associated with bands of limestone by granite and porphyry intrusions.

In reference to lode mines, 10 claims of low-grade ore situated in the immediate vicinity of Atlin town, have been sold for $250,000 to an English syndicate represented by Lord Ernest Hamilton, who is now here. A mill site has been surveyed and water rights aggregating 5,000 in. have been applied for. Miller & McKinnon, discoverers of the camp, are opening up their quartz ledge at the outlet of Surprise Lake.

Since the close of the placer season—September 15th—at which time creek and bench claims need not be represented, assessment work is being done generally on the principal lode mines already discovered.

So far, copper, galena, cinnabar, gold and silver have been found to exist in ores in the various sections of this portion of the Cassiar District, but the heavy accumulations of gravel covering the country in every direction have rendered, and must continue to render, prospecting of this nature a difficult and unsatisfactory matter.

The present season has shown that placer and hydraulic mining can be conducted for a period of 5 months, beginning with the middle of May.

Atlin Lake only remains frozen from the first of January until the latter part of May. The result of the long summer season is vegetation luxuriant for so high an altitude. Extensive belts of merchantable timber cover the valley flats on the lower elevations.

ABSTRACTS OF OFFICIAL REPORTS.

North Star Mining Company, California.

This company, which was organized in 1884, on June 30th, 1899, transferred its property in Nevada County, California, to the North Star Mines Company, a new concern. The present report is the closing statement of the old company.

President James D. Hague's statement says: "The North Star Mining Company (of California) continued its business and the current operation of its mines and mill at Grass Valley until June 30th, 1899, when it completed the final delivery of all its properties, business and assets of every sort to its successor, the North Star Mines Company (of New Jersey). The first named corporation is now in legal process of dissolution.

"During the last half year of its corporate existence the North Star Mining Company produced (practically all from the Stockbridge or Massachusetts Hill Mine) $210,047 from 14,296 tons of ore milled, an average yield of $14.69 per ton. The operating and general expenses of the Stockbridge, including all cost of development pertaining thereto, amounted to $140,320, affording an operating profit, for the six months, of $69,727, being about one-third of the product and showing an average cost per ton of $9.81 and an average profit per ton of $4.88. The yield, per ton, is considerably lower than usual, as the vein has lately carried a large amount of poor material, inseparably mixed with the quartz, reducing the average quality of the mill stuff and diminishing the profit, per ton, accordingly. The Stockbridge or Massachusetts Hill Mine yielded about $3,000,000 to $5,000,000 in early days. It has produced since it was reopened by this company in 1896 about 50,000 tons of ore, yielding $900,000, averaging $18 per ton, and giving about one-third, or $6 per ton, in profit. The profit actually realized during the last 30 months of this company's operation is about $300,000, or $10,000 per month, all of which comes from the Stockbridge alone. The New York Mill Mine and old North Star Mine are now both doing development work with little or no production at present. Both mines are opening ground in the expectation of profitable operation before very long. Both mines have been large and profitable producers and justify the expectation, on deeper and more extended development, of doing as well in the future as in the past.

"The old North Star Mine yielded in early days about $3,000,000. Since being reopened by this company it has made a further product of nearly $2,550,000. This was mainly produced during five or six years prior to January 1st, 1894, at which time the operating profit amounted to about $615,000 subsequently somewhat diminished by outlays for prospecting and further development. The entire product of this company from this mine was derived from about 140,000 tons of ore, showing an average yield of over $18 per ton. These facts have an important significance, touching the future probabilities and possibilities of the ground which the North Star Mining Company has long been acquiring and has consolidated under one ownership, and which is now to be developed in greater depth by the new North Star Mines Company.

"The North Star Mining Company's product from the North Star and Stockbridge mines amounted to $3,446,295. Expenses of every sort for operation, prospecting, development and management amounted to $2,657,060; leaving an operating profit of $789,235. Of this the sum of $70,436 was paid for acquisition or improvement of other property, and $534,850 in dividends; a total of $605,286, leaving a balance of $183,949 to be transferred to the new company. Of this $171,978 was in cash, and $11,971 in mine supplies.

"From the foregoing it appears that the profits realized from operations have amounted to something over $900,000, of which there has been reinvested in the property, either in purchase, improvement or development, nearly $200,000, leaving a little over $700,000 in cash available for dividends. Meantime the company has gradually acquired and equipped a very large additional mining property, comprising many patented mining claims, covering hundreds of acres, forming one compact body of ground, and including three principal mines of noted record as large producers which have yielded now, in the aggregate, $10,000,000 to $12,000,000, to develop which at greater depths is the purpose and business of the new North Star Mines Company. This consolidated property is now valued by its present owners at not less than $2,000,000, which is the par value of the 200,000 shares of the new company's stock given to the old company as the purchase price of the properties recently transferred by the old to the new company.

"The North Star Mines Company (of New Jersey) is incorporated with 500,000 shares, par value $10 each, of which 250,000 shares have been issued; whereof 200,000 shares have been given, as above stated, for property and 50,000 shares have been sold at $10 per share, providing ample working capital for the further prosecution of the business which the North Star Mines Company has undertaken."

NEW GAS ENGINES FOR MINING PURPOSES.

One of the largest single orders ever given to a firm for gasoline engines was secured last month by the Weber Gasoline Engine Company. It calls for engines aggregating 450 H. P., subdivided in units of 50, 40 and 30 H. P. engines. All are to operate on No. 2 F. H. distillate, and are being built for the Ray mines, Limited, in Arizona, a corporation operating copper mines. The order given to the Weber Company will mean an outlay of $50,000. There are some very interesting features connected with this order and the district where the engines are to be delivered. The contract was sought by leading manufacturers of gas and gasoline engines in the United States, England and Germany. English engine builders were especially keen after it, as the mining corporation is an English concern. No. 2 distillate is perhaps the cheapest fuel known and the engines will be operated by it at a cost of 0.6c. per horse-power-hour. They will be run 24 hours a day. The entire number of engines must be built and in operation at the mines by April 1st, 1900. The mines are located 80 miles from a railroad, but the mining company has graded and made a roadway the entire distance. This will necessitate hauling the engines in wagons to the seat of operations. The Weber Company will send a corps of machinists to set up the engines. These machines constitute one-half of the power plant. The remaining half will be installed within one year. The contract expressly states the engines must be installed and in operation by April 1st, and to do this in the five months' time the Weber Company will operate its factory day and night.

Another order for a 30-H. P. engine was completed and shipped October 25th to the Norwegian Copper Works. This order was secured through the London agent of the Weber Company, and the engine will be operated in a corner of the world of which little is known by the great majority of people. The Norwegian Copper Works are at Birtavarre in Kaafjord, Lyngenford Island, of Tromso. This island is north of the northern coast of Norway, and near the 70th parallel, almost as far north as the most northern point of Alaska. In this remote place a specially constructed gasoline engine, bearing the name of the Weber Gas and Gasoline Engine Company, Kansas City, U. S. A., is to run the blowing engines for the furnaces of the works. Another shipment will shortly be made to the Isthmus of Panama, where quite a number of Weber engines are in successful use.

MINERALS IN WEST PRUSSIA.—A report on the useful minerals in the provinces of Posen and West Prussia has been published in the "Reichs-Anzeiger" by direction of the German Geological Institution, from which it appears that in the former province there are, besides meadow or bog iron ore, rock salt, lignite and many other substances that can be turned to account. As to the minerals that have to be won by regular mine workings, rock salt and lignite, it is stated that the former has been worked for a long time at Inovrazlav.

RECOVERING A BORE-HOLE.*

By W. J. Cousins.

As the jamming of crowns and core barrels, while one of the most ordinary mishaps incident to deep borings, is undoubtedly responsible for nearly every ultimate failure, it may be interesting to follow the methods whereby the recent very serious difficulties arising from this cause have been completely overcome at the Ropersole boring of the Kent Coal Exploration Company, in Kent, England.

This boring (which is, I believe, the deepest active bore in the United Kingdom) had reached a depth of 1,773 ft. 7 in. in very hard carboniferous sandstone rock, when, on May 18th, the drill became fast in the hole. At this time a diamond crown was in use, drilling to an outside diameter of 5⅜ in., with a core barrel and chip cup, each 20 ft. in length, and 2⅛ in. steel boring rods to the surface.

The accident appears to have been primarily due to the breaking up and wedging of the hard sandstone core in lines of natural cleavage, and, in a lesser degree, to the running of fire-clays and other soft strata above, bringing down small quantities of heavy iron pyrites, and completely fastening the core barrel and chip cup in the bore.

No time was lost, following this mishap, in applying the ordinary means at our disposal to clear the hole, and the same day an attempt was made to draw the rods and tools with screw-jacks. This, however, only resulted in a breakage of the rods at 65 ft. from the surface. Then the company's 60-ton hydraulic jacks were ordered from another boring, and on May 20th they were in position and the rods rescrewed to the top of the hole. With a pull of perhaps not more than 25 tons the rods broke again, this time at a depth of about 1,445 ft., leaving the crown, barrel and chip cup in the bore, with about 280 ft. of rods.

Unfortunately (as we afterward discovered) the position was further complicated at this stage by the fact that only 180 ft. of rods remained attached to the core barrel, the remaining 100 ft., evidently partially unscrewed by the concussion of breakage, having been drawn nearly to the surface, and thence dropped with great force on to the end of the rods below. The effect of this impact was to bend and twist the rods in the hole, and to force the free end for some distance into the comparatively soft strata at about 1,540 ft., the detached 100 ft. of rods becoming wedged between the fixed rods and the sides of the bore.

We decided in the first instance to cut through the rods at 1,540 ft., and for this purpose prepared a bell-shaped steel cutter, with fine teeth on the outer bevelled edge, the use of which was followed, as found expedient, by cutters of varied design. As the steel rods were not rigidly fixed, the cutting was difficult, and the angle followed was so acute that it took 14 in. of vertical cutting to get through. This work occupied several days, as the cutters needed frequent resetting. Having eventually cut through the rods, our intention was to get a gripper down and make another effort to draw the tools before proceeding further. On withdrawing the cutter, however, the rods sprang back into the sides of the hole, though obviously at a less angle; and at this stage we finally decided to effect a deviation, which was successfully accomplished at 1,544 ft., at the comparatively easy grade of 1 in 72.

This diverted bore was continued to a depth of 1,589 ft. (or 45 ft. from the point of deviation), and the calyx cutters used in drilling it were set with a view to regain as far as possible the vertical direction. In this we succeeded beyond our expectations, closely following the original bore, and at 1,589 ft. the division between the two holes broke down, and the rods, falling over into our new boring, stopped further progress in this direction.

This shifting of the rods was a distinct advantage in the long run, for, after spending some days in cutting off (again at a long angle) a shoulder caused by a bend in the rods at 1,569 ft., we were able at this point to deviate on the opposite side of the original bore at an easier grade than formerly.

Since the rods were cut through in July we have bored (notwithstanding the earlier difficulty of contact with the abandoned rods) fully 222 ft., or at the rate of about 90 ft. per month—a good average rate at such depths.

*Abstract of article in London "Iron and Coal Trades Review."

CREIGHTON HYDRAULIC MINE, ATLIN, B. C.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported to the Engineering and Mining Journal.

DESCRIPTION OF LOCATION MUST BE READILY UNDERSTOOD.—The provisions of the Revised Statutes of the United States (Section 2324) require a mining location to be distinctly marked on the ground so that its boundaries can be readily traced. In marking a claim regard must be had to the topography of the ground, and the markings be so placed that they be readily followed from one to another, and that a person accustomed to tracing the lines of mining claims can, after reading the description of them in the posted notice of the location, by a reasonable and bona fide effort, find all the stakes.—Ledoux vs. Forester (94 Federal Reporter, 600); Circuit Court of the United States.

RELOCATION OF MINING CLAIMS.—Where one relocates a mining claim on the theory that a former location by another was forfeited by failure to do the necessary amount of work on same, the burden is on him to prove such failure in an action by the former locator to determine the right of possession. A location notice of a mining claim is admissible in evidence, though the direction of the closing location is indefinitely described, the location being sufficient in all other respects, and the proof showing that all the monuments were on the ground. A recital in the location notice of a mining claim, that it is a relocation of another mining claim, is an implied admission of the validity of the former location.—Providence Gold-Mining Company vs. Burke (57 Pacific Reporter, 642); Supreme Court of Arizona.

DUTY ON MAGNESIUM FLOUR.—Magnesium flour is held to be dutiable as a manufacture of metal, and not to be entitled to free admission under the rule for magnesium not made up into articles. The merchandise in question consists of magnesium ribbon and a bright gray powder known as magnesium flour. It was assessed for duty at 45 per cent. as a manufacture of metal not specially provided for, and is claimed to be entitled to free admission under paragraph 606, act of July, 1897. In a letter subsequent to the filing of the protest the appellants abandoned the claim to the magnesium ribbon.

Paragraph 606 reads: "Magnesium, not made up into articles." The board in G. A. 3312 held that magnesium powder was exempt from duty under paragraph 544 of the act of 1894, which read, "magnesium," on the ground of the paragraph containing "no qualifying words, and the

form in which the article, magnesium, is imported, whether ground or powdered, would seem to be immaterial." But the present provision does not contain qualifying words, and it was in order to ascertain the scope of this limitation that there has been a delay in rendering a decision in the case. The importers have complained of this delay, but, though requested to do so, they have failed to furnish any evidence or information which would throw light on the subject. The qualifying words are unusual, the ordinary terms of tariff limitation being "crude," "not advanced," "not ground," "unwrought" or "unmanufactured."

The board has no information as to the various forms in which magnesium is made up into articles; but we do know that magnesium flour is used in photographic flash-lights, and for other illuminating purposes, and it would appear, therefore, to be made up into an article ready to go into the hands of the consumer. Grinding may or may not change the character or identity of an article. Ground wheat, for instance, is no longer wheat, being commercially known as wheat flour; while grinding coffee does not change its tariff classification nor commercial designation as coffee.

The merchandise would seem to be made up into an article. At any rate, the presumption is in favor of the correctness of the classification, and in the absence of any evidence in support of the protest the decision of the collector is affirmed.—In the protest of G. W. Sheldon & Company, against a decision of the collector of customs at Chicago, Ill.; United States Board of General Appraisers.

RECENT PRACTICE IN MAGNETIC SEPARATION IN SWEDEN.*

By H. C. McNeill.

In the summer of 1898 the author had the opportunity of seeing some of the principal magnetic concentration plants in Sweden, and the present paper is mainly confined to these. He is indebted to the various managers of works, engineers and others for the information freely accorded in every case. The endeavor has been to present an outline of the machines and ore treatment processes. The sketches are entirely diagrammatic, and have been prepared from the author's hand sketches. The machines will be described in each case with the accessory ore treatment processes, in the following order: 1. The Wenstrom machine. 2. The Monarch machine. 3. The Dellvik-Grondal machine. 4. The two types of Heberle machine.

1. The Wenstrom Machine.—This is probably the simplest, and, for the particular purposes which it is intended to fulfill, the most efficient separator at present in use. Unlike some other designs, it is capable of treating ore of fairly large size, and it is not necessary that the stuff treated should be previously dried; its chief use is in those cases where the magnetite iron ore contains inclusions of rock, or where, as in open cast workings, portions of the containing walls of the ore body get mixed with the ore in blasting and like operations. As a general rule, it is found to be more economical to pass the whole of this material collected together over a Wenstrom machine, after the best of a blast has been dealt with, than to attempt further hand selection in the quarry or under ground. In addition there are other uses to which this separator may be put, such as the treatment of cupola residues and foundry loam and sand; also the recovery of cast-iron shot entangled in blast furnace slag, etc.

Fig. 1 gives a general view of this machine. The material to be treated is fed through a hopper, A, and on to a jigging tray, which receives its motion from a cam arrangement placed on the shaft, B B. This tray is inclined, and at each recoil a line of ore is left on the drum. Figs. 2 and 3 show part sections of the drum in directions at right angles to one another. C is the armature barrel, consisting of a series of soft iron bars, each separated from the other by a bar of wood. D is a stationary field magnet, placed eccentrically with regard to the armature barrel. Non-magnetic end plates, carefully fitted with jointing, so as to be water tight, bind up the whole into the form of a drum. The bars of soft iron are internally shaped so that each successive bar becomes oppositely magnetized, a combination of greater power being thus exerted on a piece of ore large enough to bridge the distance between two adjacent bars.

The magnetic portion of the ore adheres to and is carried round on the drum until beyond the influence of the magnetic field, when it drops away down a shoot at E, while the non-magnetic portion passes down in front of the drum into a shoot at F.

A machine with a drum of 2 ft. 2½ in. diameter and 2 ft. length, revolving at 30 revolutions per minute, will treat about 5 tons of mixed material per hour. Such a machine is capable of dealing with ore of any size up to pieces that will pass through a screen of 4-in. mesh, and requires a current of 15 amperes, the tension at the dynamo terminals being 110 volts. Although the machine may be and is used on ore which is quite wet, the greatest efficiency is obtained when the material to be treated is dry, and in some cases, as at Dannemora, Sweden, care is taken to treat only that ore which is fairly dry, without incurring the expense of artificial drying; while in other instances—Grangesberg and Grangen—the ore is treated directly after being washed, and while quite wet. This separator requires but little care and attention when working, while the cost of maintenance is practically nil.

Generally the most efficient plants are also the simplest. The process usually consists of either a rough preliminary sizing by means of revolving or flat screens, with or without washing, followed by treatment on the separator, or the uncleaned ore may be passed on to the magnetic machine direct, and subsequently screened into different market sizes. At Dannemora the latter method is adopted. The ore on arrival at surface is first subjected to a rough hand selection on sorting floors conveniently arranged near the shaft. Between 50 per cent. and 60 per cent. of the total quantity of ore raised is rich enough to be taken direct to the furnaces. The remainder, which is of any size up to 2 in. diameter, is trammed from the sorting floors to the separation plant, or to the ore heaps, for future treatment by the separator. Fig. 4 represents the plant in use. By means of the elevator shown, the ore is lifted and dropped on to the inclined shoot, A, and so on to the reciprocating table, B, which delivers it to the Wenstrom separator, D. The tray, B, receives its motion by means of the small eccentric, C. The unmagnetic, and in this case worthless portion, falls at once down the shoot, E. The magnetic portion is carried round on the drum of the separator in the manner already described, and passes down shoot G into the revolving trommel or screen, H. This trommel is of ½-in. steel plate, provided with ⅞-in. punched holes pitched 1⅜ in. apart, so that everything under ⅞ in. diameter passes down and through the shoot, M, the stuff above ⅞ in. which does not pass through the holes of the trommel being delivered down the shoot, N, two marketable products being thus obtained.

An example where preliminary sizing and washing before separation is found to be advantageous is at Grangesberg, Sweden. The mill is built at the foot of an embankment, so that the material to be treated is wheeled either in railway trucks or mine wagons directly into the top story. During the winter, for obvious reasons, it is found impossible to run the mill; during this time large reserves of ore are accumulated. The railway trucks, when used, are so constructed that the whole sides can be dropped and rest horizontally on the top of grizzlies which extend from end to end of the truck. In Figs. 5 and 6 the truck is represented at A, and the grizzlies at B. The ore is shovelled by four to six men out of the truck on both sides, and that which is too large to pass through is hand-picked into the wagons, D, by men and boys standing on the platform shown. The grizzlies are made of bars of iron, rectangular in section, and placed 5 in. apart, so that all the material under that size falls down the shoots, C C, and on to a three-bottomed perforated recoil table, E. If small stuff has to be treated it is dumped directly down the central shoot—Fig. 6—from the mine wagons, which are run into the mill on the narrow-gauge rails shown and without being passed over the grizzlies. The three bottoms of the table are placed exactly above one another, and about 3½ in. to 4 in. apart, and are all actuated by means of the cam shaft, cam and springs. The top tray is provided with holes 1¼ in. diameter and 2 in. pitch, the middle tray has holes ¾ in. diameter and the bottom one ¼ in. diameter. The ore is distributed in an even layer by means of the hinged iron plate F, assisted by the vibrations given to the table, by which means it is gradually worked down the tray, and at the same time is subjected to a thorough washing, the water for the latter purpose being supplied by the 3-in. perforated pipes, M M. The result is that all fine particles of ore are washed through the three trays down the shoot, H, and are carried off with the water by launders out of the mill, where boys are engaged in digging small channels, whereby the water very quickly drains away, leaving a coarse powder which is sufficiently rich to be marketable. The stuff under 1¼ in. and over ¾ in. diameter passes through the holes in the top tray, and is caught by the middle tray; that which is less than ¾ in. and more than ¼ in. diameter passes through the middle tray and is caught by the third tray. Both sizes fall into the same shoot, L, and are treated on the smaller Wenstrom machine R. The material between 1¼ in. and 5 in., after being thoroughly washed, is delivered from the topmost tray into a shoot, J, and then into a revolving trommel, K, also provided with 1½-in. holes, and the ore which passes through these holes is taken by shoot N to join the products from the middle and lowest tray, and is treated by the separator, R. Stuff between 1½ in. and 5 in. is delivered from the end of the trommel, K, on to the feed plate of the larger separator, W. The material which comes away from the "worthless" shoot, X, is deposited on a slowly moving broad metallic belt, Z. Here any pieces of valuable ore are hand picked off by boys and dropped into a shoot placed on either side of the belt, the worthless portion being left on the belt and traveling into a separate compartment. The use of the belt may be explained by the fact that the weight of some of the larger pieces of ore is greater than the magnetic force exerted by the machine, in which case they would fall off and get mixed with the worthless portion; also that it is more economical to adopt these means instead of hand spalling and selecting the material to be treated according to more or less exact size. In addition, a lump of the stuff may be partly magnetite and partly unmagnetic, and if the latter happened to come into contact with the drum first, it would not adhere.

Three commercial products are obtained: 1. Ore between 1½ in. and 5 in. diameter. 2. Ore between 1½ in. and ¼ in. diameter. 3. Ore anything up to ¼ in. diameter.

The Grangesberg plant was designed to meet the particular requirements at the mine. The ore contains a considerable amount of specular iron, which somewhat easily crumbles, also hematite, and differs from that of Dannemora where the ore is compacted very hard and there is little or no tendency to crumble; hence, probably the difference in the methods of treatment and the primary washing, in order to save and eliminate the fine material.

At both Dannemora and Grangesberg the uncleaned ore averages 38 to 42 per cent., and the concentrates 58 to 62 per cent. metallic iron.

The rejected portion of the material consists of quartz, pegmatite (from inclusions and veins running through the magnetite ore bodies), schistose material, etc.

In both the preceding cases the operations of sizing or screening the ore are carried out mechanically either immediately before or after separation, but it may happen that the deposit is so situated as to render it necessary that the ore should be brought down to a convenient mill site, in which case the apparent disadvantages of position may be made use of in many ways. A case in point is at the Sclotterberg Mine at Grangen. It appears that a considerable amount of work was done many years ago some 300 to 400 ft. up the side of the hill, where large dumps were left by the old workers. In those days there were no magnetic separators, and only the very best picked ore was used; it is now found to be worth while to treat these old heaps. The stuff consists of anything between a powder and 6 in. diameter, and the whole of it, just as it comes to hand, is treated by screening, washing, sizing, etc., while on its way to the foot of the hill.

The first operation which the stuff undergoes is shown in Fig. 7 at A, where the ore is dumped on to a screen at that point, and is spread

* Abstract of paper read before the Iron and Steel Institute, of Great Britain, August, 1899.

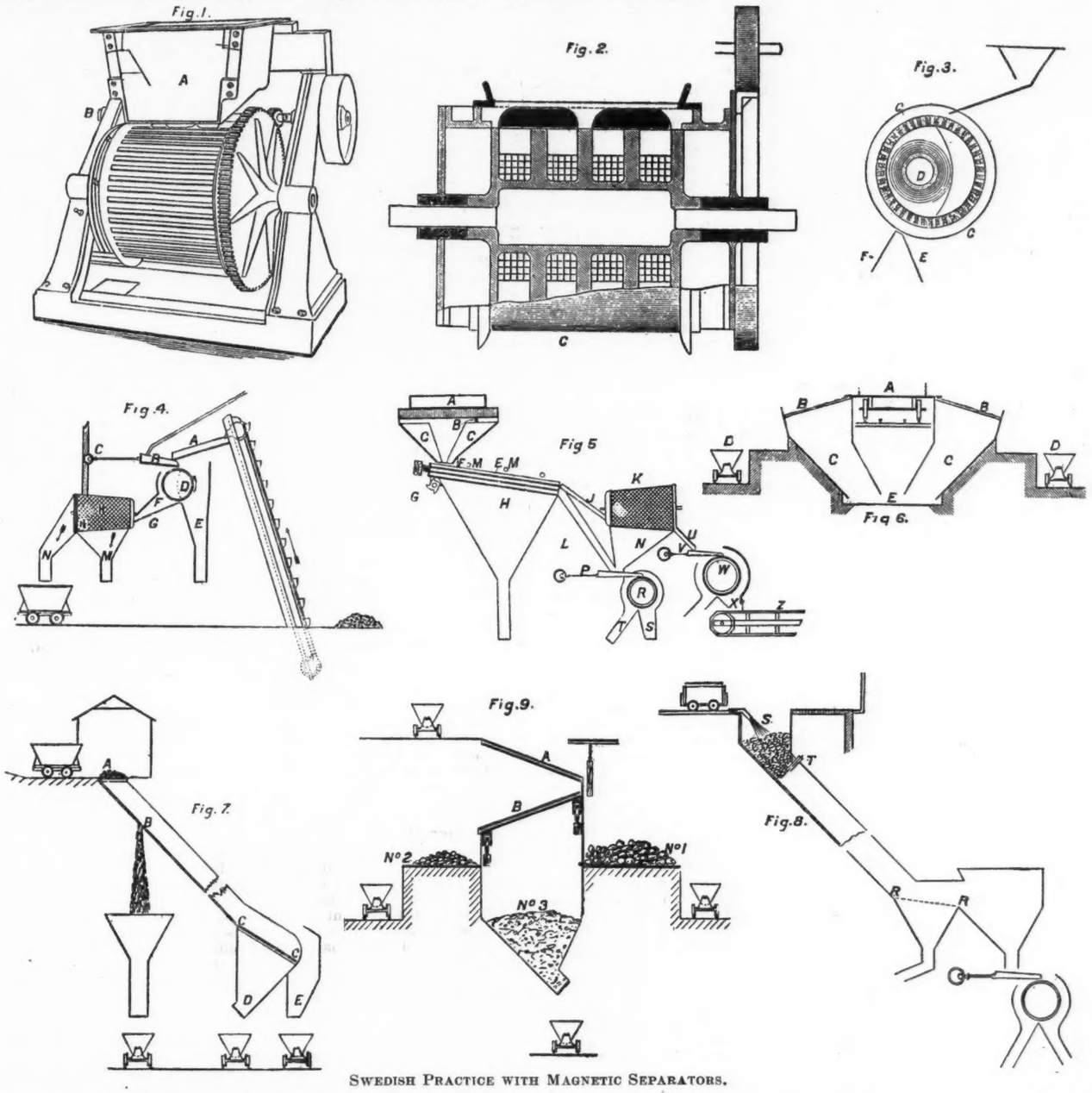
out by boys with rakes, and as much of the finer material which adheres to the larger pieces sent through the screen; the latter, which has an area of 9 sq. ft., passes everything under 2½ in. diameter, the larger pieces remaining on the screen being hand picked; after passing through the screen the ore falls down the wooden shoot, which is some 18 in. square in section and lined with iron plates, the whole roughly secured to trestles against the side of the hill, at about an angle of 45°. At B is a rectangular opening in the bottom of the shoot, 2 in. wide, which allows a quantity of the finer material to drop through, but which is skipped by larger pieces as they roll down. Arrived at the bottom of the shoot, the pieces of ore, being thus fairly screened, fall on to another screen, CC, with which the shoot terminates, where a further separation of the smaller material takes place. This screen is 10 ft. in length and the bars are placed longitudinally and ½ in. apart. The material under ½ in. diameter passes through and is caught in the shoot, D. The finer stuff so eliminated, together with that which drops through at B, is dumped near at hand as worthless, and the remainder, of size between 2½ in. and ½ in., falls into shoot E; from this point it gravitates down an inclined tramway until it arrives at the top of another shoot or launder, also placed against the side of the hill, and terminating in the separator plant (see Fig. 8).

The product from shoot E is tipped from the wagon into a square chamber at the top of the launder, and is kept in place by a shutter or plate, T, by means of which the feed of ore down the launder may be regulated, after being washed by water from the hose pipe shown. The height of the ore chamber, S, is 60 ft. above the separator, and on its way down the material is well washed. At RR is a fine screen through which passes the finer material still left, together with the water, the residue of washed ore passing on to the Wenstrom machine.

In addition to the old dumps mentioned, good ore has recently been discovered near the base of the hill, which is possibly a continuation of the deposit worked, as already stated, higher up. The ore thus obtained is first screened close to where it is mined. Fig. 9 is a sketch of the plant used for this purpose. A is an inclined screen made of old railway metals with an effective opening of 5 in. between each; pieces above this size roll off the screen and form No. 1. Pieces under 5 in. pass through and are caught on screen B, also made of old rails, but placed 2½ in. apart, so that the material between 5 in. and 2½ in. falls to the sorting floor and forms No. 2. The ore under 2½ in. that passes through screen B forms No. 3.

No. 1 is hand spalled, selected, and divided into: A, almost pure magnetite; B, material containing 60 to 70 per cent. magnetite; C, gangue with 12 to 15 per cent. magnetite. A and B are sent to the furnace, while C is dumped as worthless.

No. 2 is similarly treated. No. 3, after a further screening, is passed on to the separator.



SWEDISH PRACTICE WITH MAGNETIC SEPARATORS.

The top screen may be extended to any length, according to the amount of ore to be treated. The under screen, B, is usually a short piece, mounted, as shown in Fig. 9, on wheels, so that it may be moved under any part of the upper screen that it may be convenient to use. It is also a good plan to divide up the shed into compartments, so that when sufficient ore has been put through to be easily looked over by one man, the operation may go forward in another compartment. By these means also the workmen on the lower platform are protected from the falling ore.

(To be concluded.)

COAL TRADE OF BELGIUM.—For the nine months ending September 30th the imports of coal into Belgium were: Germany, 1,093,840 metric tons; France, 435,992; England, 432,557; other countries, 7,345; total, 1,969,734 tons. This is an increase of 386,261 tons, or 24.2 per cent., this year.

PROSPECTING BY SHAFTS.

When the prospector thinks that a certain piece of land is underlaid with ore or mineral, which he wishes to test more thoroughly than can be done by means of a small bore-hole, the first and most important question before him is the location of his shaft. It is here that by far the greatest number of mistakes are made, and the most time and money are wasted. A little knowledge of geology and of the occurrence of mineral deposits will save the miner many days of useless work. Everyone should know, for instance, that coal-beds, being of sedimentary origin, are not likely to be found in a country where the ledges that outcrop show that the ground is underlaid with volcanic or igneous rock; yet prospectors have been known to look for coal in a region where all the indications showed that they would strike nothing but rhyolite. Every mining excitement is pretty sure to see work of this sort. For instance, the work done by the various State geological surveys in the Lake Superior District has shown that the iron ore deposits always occur in connection with a banded quartz rock containing more or less iron, generally known as jasper. Yet at the time of the Mesabi excitement, in 1892, prospectors started to sink shafts in granite ledges half a mile away from the nearest indication of jasper. It is true that expert geologists who had visited the range in previous years, and had examined the few outcrops of jasper, had reported against the probability of large iron ore bodies being found, and the chief bodies discovered, some of them the largest in the world, were found by pits put down by men who were not old miners, and had no scientific training. Yet a large amount of money would have been saved and the ground shown up just as well had these pits been put down in a systematic way and not haphazard.

The prospector, as a help, should make a rough map of the ground he proposes to open, taking in a considerable area of the surrounding country. This can be done with an ordinary pocket compass, to determine directions, while distances are approximated by pacing. Such a map, while of no value for accurate work, would show the general lay of the country, the course of any prominent ridges, and the direction of any mineral vein whose course can be determined. The practical miner, however, too often despises such aids, going on the principle that "one man can see as far into the ground as another," and that "where ore is, there it is."

The prospector, if he is opening a vein or bed that outcrops, or, as shown by the bits of ore in the soil, probably is overlaid with but a few feet of debris, can, with pick and shovel, dig shallow trenches across it determining its direction and its dip into the earth. Analyses of chippings taken with a pick across the vein, being careful to take all ore and rock in the section where each test is made, will give a fair idea of whether it will pay to open deeper. Prospectors are prone to pick out the richest streaks, deceiving themselves, and dishonest men disregard the poor rock. In this respect it is to be remembered that ore deposits are not likely to grow better with depth. Exceptions occur, but in general it does not pay to work purely on hope. The oxidized rotten surface rock often carries low values, owing to the minerals having been leached out; but in such cases, while increased depth may bring higher values, the ore below the weathered zone is likely to contain sulphur and other substances that make it more difficult to reduce. In case the deposit lies flat, or nearly so, and the country is level, or if the surface dirt is deep, the prospector must sink a shaft. Having determined where he is most likely to find ore, he will sink this shaft where he is likely to reach it quickest. Yet men of many years' experience have shown no better judgment than to start sinking on top of a hillock, necessitating 50 ft. or more of unnecessary digging, when the chances of finding ore were just as good in lower ground a few hundred feet away. If timbering must be used, the size of the shaft should, as a rule, be not less than 4 by 5 ft., to enable the miner to work to advantage, and shafts 5 by 7 ft. are frequently used. Only a rich company, opening ground where it is practically certain that a paying body of ore will be found, can afford to take chances with large shafts.

A simple windlass, made by any woodsman out of a stick of timber 5 or 6 in. in diameter, with pieces of bent ⅞-in. iron as handles, stout rope, half of a whiskey barrel for a bucket, shod with iron, and with an iron bale, will be all the pumping and hoisting apparatus needed in many cases. Three or 4 men can put a hole down 100 ft. with such an outfit unless water is troublesome. Where wages are high, and outfits can be brought in by horses, a horse whim will enable rapid progress to be made after the hole is over 50 ft. deep. Where a pump must be used, necessitating a boiler, a steam hoist will hurry up things for depths of 100 ft. or so. In regions where fuel is scarce, water will probably give little trouble, and pumps will be unnecessary. In such regions, where a shaft is down any depth, gas or gasolene engines, as more efficient prime motors than steam engines, have the call for hoisting. Such engines are made by a large number of firms in this country, in a great variety of sizes and patterns. Small hoists, especially adapted for prospectors' use, have been devised, that can be readily taken apart, in pieces light enough for transportation by a mule, while the fuel can be brought in at less expense than wood or coal.

For pumping there are a great variety of steam pumps on the market, and it will be generally found advisable, unless transportation charges are very high, to try to use a steam pump rather than to pump by hand. Where the water level is near enough to the surface to cause trouble in sinking 100 ft. or so, the ground is likely to be well wooded, making fuel cheap. It will be advantageous to use a strong and simple pump that can be run by unskilled labor, rather than to try for economy in fuel consumption with one more delicately built. A pump for prospecting work should be able to handle dirty and gritty water without constant trouble with the valves.

In stiff clay and in rock the shaft will not need timbering unless the ground is wet and the walls of the pit are liable to fall in. In sinking through sand or gravel, or in ground full of boulders, that may be dislodged, the pit will have to be timbered. For this, ordinary cribbing will answer. If the timber is small, round sticks can be used; if it is of large size it will have to be roughly hewed to convenient dimensions. Stringers down the sides of the pit, spiked to the cribbing at intervals, will hold things in place.

In case quicksands are encountered, the prospector may find his labors wearisome. Instances are known where a company equipped with pump, steam hoist, etc., has, after digging and pumping for two or three weeks, found that the bottom of the shaft was not so deep as when work began. The usual course is to drive down short pieces of timber, ahead of the excavation around the sides of the pit, forming tubbing, as it is called. Frequently it is necessary to fill in with waste lumber back of the cribbing if the quicksand contains boulders which, when the quicksand runs down, may fall and smash the timbers. Where the quicksand is of considerable thickness, the ordinary tubbing and cribbing will not suffice. In such a case the ordinary prospector can do nothing. Where it is necessary in opening up a proved body of ore or mineral to sink through a bad quicksand, a variety of methods can be employed. These methods, however, are of such importance as to deserve treatment by themselves, as showing how different minds have solved some of the intricate problems nature has set for man.

For ventilating an ordinary prospecting shaft no special apparatus is usually needed. In a shaft of some size a tight partition down one of the compartments will afford a way of getting sufficient draft to keep the air at the bottom clear. Where compressed air drills are used for sinking, the exhaust from the drills will keep the air pure enough. In a small shaft of some depth, where work must go rapidly, and the powder fumes give trouble after blasting, a light and handy outfit can be made from a small hand-power fan, and a tube made from heavy drilling, or cotton cloth dipped in paraffine, or otherwise treated to make it water and air tight. A few turns of the fan after a blast will clear up the air decidedly, while the cloth tube can be hauled out of the way of a blast, and when not in use occupies no room, as it will lay flat against the side of the shaft.

THE SLATE INDUSTRY OF THE UNITED KINGDOM.

There has been increased activity in the slate producing centers of the United Kingdom, notwithstanding the aggressive importation of American slate. During the year 1898 the United Kingdom reported an output of 668,859 long tons of slate, valued at £1,900,228 ($9,501,140), which compares with 613,175 tons, valued at £1,661,223 ($8,306,115), in 1897, showing an increase of 55,684 tons in quantity and £239,005 ($1,195,025) in value. Of the production in 1898 the quarries furnished 491,195 tons, and the mines or underground quarries 177,664 tons. This does not include fissile limestone and fissile sandstone, which are also used in some districts for roofing purposes, and are known locally, though not correctly, as "slate."

Of the five producing districts in the Kingdom all show a larger output than 1897 with the exception of Ireland. The principal source of production is Wales, which furnished last year 507,021 tons, valued at £1,668,980 ($8,344,900), or about 76 per cent. of the total. England holds second place with 91,015 tons, valued at £126,160 ($630,800); Scotland is third with 42,674 tons, valued at £85,976 ($429,880); the Isle of Man comes next with 21,508 tons, valued at £1,282 ($6,410), and Ireland is last, in considering quantity, with 6,641 tons, valued at £17,830 ($89,150).

Of the slate produced in Wales 337,967 tons came from quarries and 169,054 tons were mined from underground workings. England's supply was 82,405 tons from quarries and 8,610 tons from mines. In all the other districts the slate produced came from quarries exclusively.

In Wales there were 7 producing counties in 1898, the largest being Carnarvon, Merioneth, Pembroke and Cardigan. In England there are 9 counties, the 3 principal ones being Cornwall, Devonshire and Lancaster. In Scotland there are 4 slate counties—Argyll, Perth, Caithness and Aberdeen. In Ireland, Tipperary holds first place, and Cork, Kilkenny and Wexford follow.

The production of slate and slate slabs in the United Kingdom during the last 10 years, as collected by the Inspectors of Mines and Quarries, is as follows:

	Long Tons.	Value.		Long Tons.	Value.
1889	458,436	$5,093,974	1894	461,673	$5,692,838
1890	434,352	4,992,363	1895	581,760	6,192,349
1891	415,029	4,796,820	1896	586,933	6,503,924
1892	418,241	4,985,980	1897	613,175	8,072,543
1893	438,993	5,383,062	1898	668,859	9,235,106

The increased output during the past few years is a matter of much interest, inasmuch as the American quarrymen have been very energetic in introducing their slate to the markets formerly supplied by the United Kingdom. In 1898 the total exports of roofing slate from the United Kingdom amounted to 29,862,600 pieces, valued at £187,781, or $939,000 in round figures, showing a decrease as compared with the previous year of 1,468,900 pieces in quantity, and £20,841, or $104,000 in value. Of the shipments made in 1898 Germany received 21,457,800 pieces, valued at £116,181 ($580,905), against 24,331,900 pieces, valued at £132,211 ($661,055), in 1897; Denmark, 2,664,100 pieces, valued at £35,358 ($176,790), against 3,023,500 pieces, valued at £37,803 ($189,015); Australasia, 1,649,600 pieces, valued at £14,762 ($73,810), against 652,100 pieces, valued at £17,032 ($85,160); Channel Islands, 660,700 pieces, valued at £6,196 ($30,980), against 613,700 pieces, valued at £5,799 ($28,995); South Africa, 606,600 pieces, valued at £5,712 ($28,560), against 980,000 pieces, valued at £8,298 ($41,490); Holland, 1,167,900 pieces, valued at £4,393 ($21,965), as against nothing in 1897. The balance was distributed among France, Austria, the West Indies, etc., only a very small quantity going to the United States.

PETROLEUM IN HUNGARY.—At a meeting of the Society of International Science in Lemberg, recently, Professors Midzwiedzki and Züber delivered a lecture on the discovery of petroleum in Hungary, at Mahrne, in the District of Czaesa. The oil is of a light brown color and does not contain any benzine, but yields nearly 70 per cent. of burning oil, with a boiling point of from 150-300° Cel. It contains very little paraffin. It is anticipated that regular boring will be commenced in this district.

A NEW DUPLEX AIR COMPRESSOR.

The accompanying illustration shows a steam actuated duplex air compressor of an improved type, built by the Stilwell-Bierce & Smith-Vaile Company at Dayton, Ohio. These compressors are of the mechanically operated inlet valve type. The inlet valves are of the semi-rotative type, actuated from a wrist plate; the ports through the valves are of extra large size, and the working parts of the mechanism are reduced to a minimum point. The discharge valves are of the poppet style,

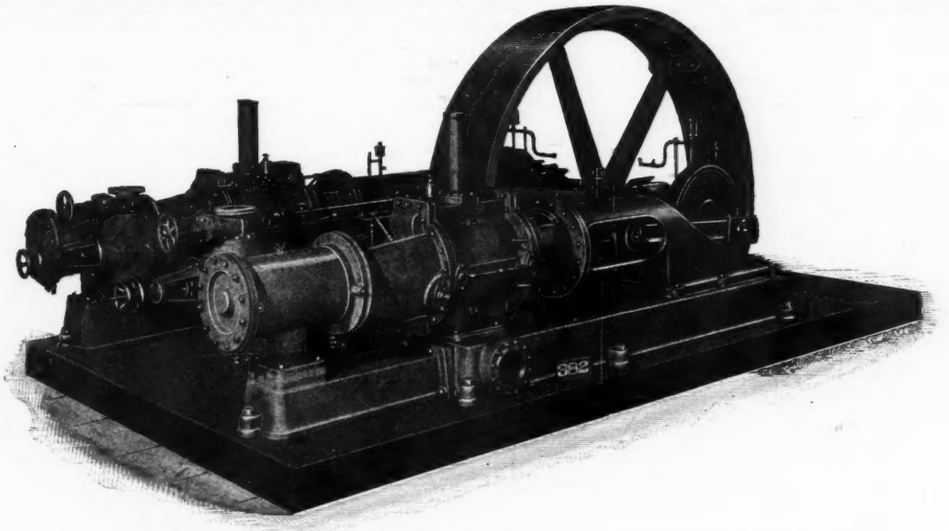


FIG. 1.—STILWELL-BIERCE & SMITH-VAILE DUPLEX STEAM-ACTUATED AIR COMPRESSOR.

the valve seat, valve and spring being of the best tool steel. The valve-seats are ground into the cylinder heads and can be readily removed for inspection; small hand-hole plates are placed over the valves and further facilitate inspection. The seating of the valves is not accompanied with that noise which has been found heretofore so objectionable. Extra care has been exercised in the design to provide a water-jacket that would give the best possible results.

The steam cylinders are out-board, and the compressor can be readily changed to one of the belt actuated type, by simply removing the steam

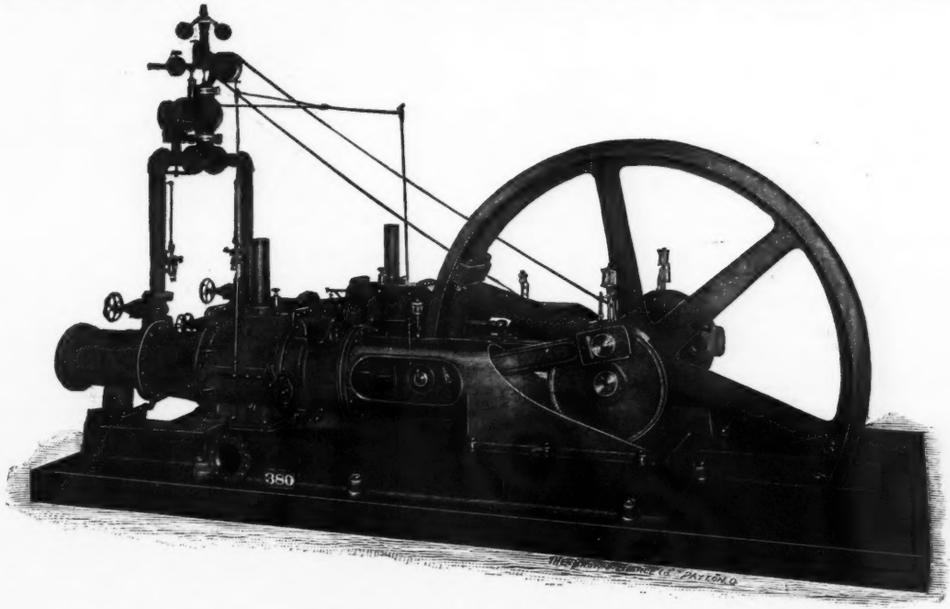


FIG. 2.—STILWELL-BIERCE & SMITH-VAILE DUPLEX STEAM-ACTUATED AIR COMPRESSOR.

cylinders. The air cylinders are connected to the steam cylinders and to the Tangye bed by heavy cast-iron yokes, the design of which gives easy access to the rod glands. The compressor is entirely self-contained, being mounted on a heavy bed-plate, while the bed which carries the cross-heads and main shaft journals is of the most improved style of Tangye type. The machines are exceptionally heavy, no expense being spared in the design or weight, to give all the strength needed.

Fig. 1 is half side and half rear view, of the compressor. Fig 2 is a side view, showing the compressor with a governor attached. The design is a clean and compact one.

RUSSIAN OIL PIPE LINES.—At last, after having been the subject of discussion for years, a pipe line is to be opened along the Trans-Caucasus Railway, from Michailovo to Batum. One reason of the delay has apparently arisen from the desire of the Russian authorities that the pipe should be of native manufacture. The opening of this line should effect a sensible reduction in the cost of the oil at Batum.

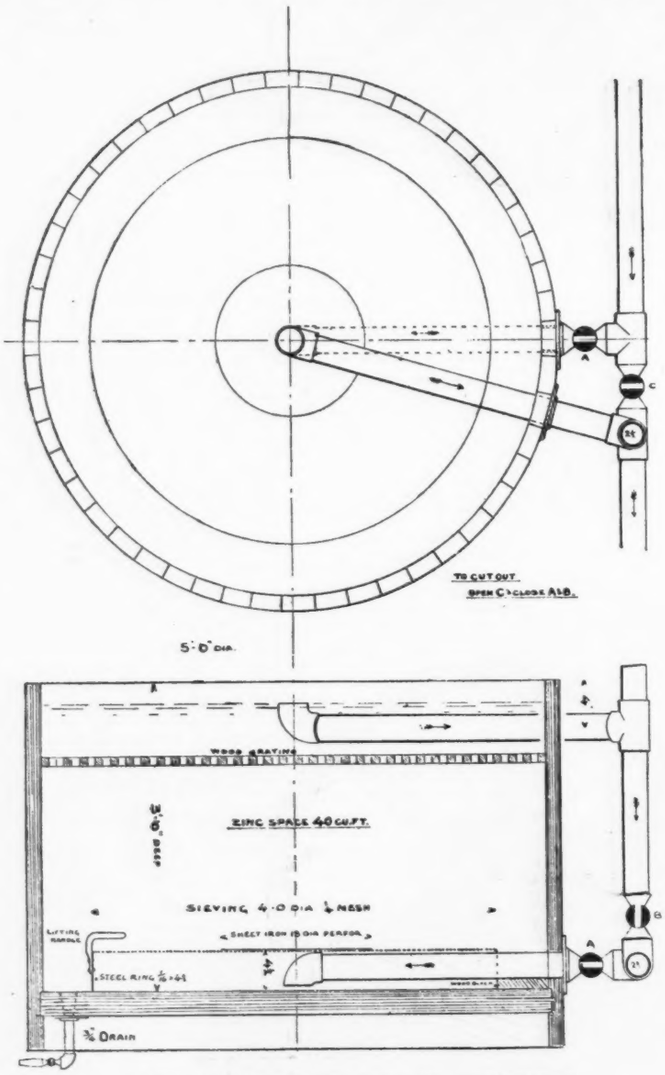
THE USE OF VATS IN PLACE OF ZINC-BOXES IN THE CYANIDE PROCESS.*

By W. A. Caldecott.

The rectangular extractor box, as used for zinc shavings or a zinc couple in the precipitation of gold from cyanide solutions, has undergone practically no change, except increase in size, since its adoption by J. S. MacArthur, and introduction on the Witwatersrand in 1890. As is well known, it has certain mechanical disadvantages, the most obvious being the tendency of the solution passing through it to travel up the sides, and particularly up the corners of the compartments, thereby forming channels. Other objections in practice are the frequent liability, from faulty construction of the boxes, of the solution to leak from one compartment to another without coming in proper contact with the zinc, and the inconveniences this leakage produces in cleaning up. I am inclined to think that imperfect precipitation has occasionally in the past been attributed to chemical considerations, or to certain constituents of the solution, when the reason has been really mechanical, or the want of proper distribution of the solution so as to ensure actual contact with the zinc. Naturally, the shape of the vessel containing the precipitating agent does not influence the chemical or electro-chemical reactions upon which the precipitation of the gold depends; but the use of small vats in place of the usual type of extractor boxes obviates the mechanical disadvantages already mentioned, and in addition these vats contain about one-half more zinc per square foot of floor space than boxes. An ordinary extractor box contains zinc shavings to the extent of about 35 per cent., to 50 per cent. of its total capacity, while a zinc vat of the type shown contains about 67 per cent. The accompanying plan and section will render these points obvious. The vat is designed with the object that the path of least resistance, which the solution naturally takes, shall be through

* Paper read before the Chemical and Metallurgical Society of South Africa, September, 1899.

the mass of zinc, thus ensuring proper contact, rather than between the zinc and the sides of the vat. The vats have an internal diameter of 5 ft. and depth of 3 ft., and may be arranged in a series of three; each vat contains about 40 cu. ft. of zinc. The even distribution of the solution in the vat may be readily seen in practice from the uniform rising of the bubbles of gas to all parts of the surface. The method of introduction of the solution, the packing of the zinc between the ring and the side of the vat, the large cross-sectional area of the vat, and the absence of corners all tend to prevent the formation of channels. For convenience in cleaning up, the ring to which is fastened the sieving, is made removable. The details of construction of these vats may be considerably modified, and a little consideration shows various ways of introducing the solution at the bottom and taking it off at the top. For instance, the inflow pipe may be brought down the side of the vat or introduced from the bottom, and in place of an elbow turned square down over the center, may terminate in a ring of perforated pipe. Similarly, for convenience in cleaning up, the bottom of the vat may be made slightly conical or sloping to an outlet on one side, which delivers by a launder into a settling vat, or is connected with the pump of a filter-press. The arrangement of the side



AN IMPROVED ZINC-BOX FOR THE CYANIDE PROCESS.

pipe-line, as shown in the plan, enables one vat to be cut out at a time without shutting off the others while cleaning up or dressing the zinc, and the open T-piece allows the vat to be readily emptied of solution, and likewise prevents any accumulation of air or other gas at the angle. With a precipitation plant composed of small vats as units, the ease of re-arrangement or extension to any degree required is readily apparent.

The use of these vats was begun recently by the Witwatersrand Gold Mining Company, and the precipitation has since been showing excellent results. Mr. W. R. Dowling, the company's cyanide manager, has furnished the following information on the subject. Two sets of vats, of three in each series, have been employed in the precipitation of about 200 tons per day of weak (0.04 per cent.) cyanide solution by means of the lead-zinc couple, the rate of flow being one ton of solution per cubic foot of zinc per 24 hours. The average value of the solution entering from July 24th to August 16th was 3 dwts., and of the solution leaving 2.5 grains, so that 96.5 per cent. of the gold was precipitated.

Special samples, taken on August 16th, showed the following results: Solution entering first vat, 2 dwts. 20 grs. per ton; leaving first vat, 10 grs.; leaving second vat, 5 grs.; leaving third vat, 4 grs.

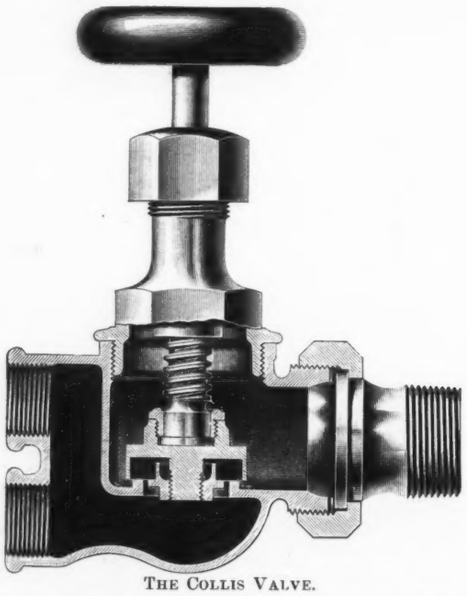
The high efficiency of the zinc in a single vat is shown by the large proportion (85 per cent.) of the total gold in solution precipitated in the first vat, the flow through which was equivalent to three tons of solution per cubic foot of zinc per 24 hours, or only 15 minutes contact. These results indicate, as is likewise shown by the appearance of the zinc, that the second and third vats only require cleaning up at comparatively long intervals.

Where zinc boxes show imperfect results from any of the mechanical causes mentioned, or where the installation or enlargement of a zinc precipitation plant is contemplated, I think that the system of using small vats in place of the ordinary type of zinc boxes is worthy, for reasons given, of serious consideration.

THE COLLIS STEAM VALVE.

The accompanying illustration shows a section of the Collis steam valve, which is now being introduced by Jenkins Brothers of New York. This valve when attached to a radiator enables a perfect circulation of dry steam at all times up to the seat of the valve. Only one valve is required for a radiator and the circulation will be active and positive, whether the valve is open, partly open, or closed. Heating surfaces can be warmed much more quickly and effectively when steam is turned on at the radiator, and the usual hammer which takes place when steam is turned on is prevented. Radiator connections can be neatly and mechanically run above the floor and attached to the valve without making them unsightly.

With this valve there is a complete circulation in the apparatus when radiators are disconnected, and they can be disconnected and reconnected without shutting down the whole system. This will be found very convenient when using radiators for temporary heating in new buildings, etc.



THE COLLIS VALVE.

The Collis valve can be adopted for use with any of the automatic heat regulating systems by removing the regular bonnet and substituting the diaphragm bonnet and trimmings of the regulating system that may be used.

QUESTIONS AND ANSWERS.

Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert. Nor can we undertake to give advice about mining companies or mining stocks. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Copper Ore Specimen.—Can you tell me what the accompanying specimen of ore may be?—C. U.

Answer.—An inspection of the specimen sent shows a copper-iron sulphide, probably chalcopyrite with pyrrhotite in a quartz vein. Such copper ores sometimes carry values in silver and gold. A careful examination and analysis of a number of specimens taken from the vein will be needed to show if the precious metal values are of any importance. Extent of vein or deposit should also be determined as far as possible before expending much money.

Asphaltic or Bituminous Sandstone Specimen.—In the accompanying package you will find a specimen of a substance found in a new locality. Is it asphalt, or does it contain any quantity of asphalt? Can you tell me what its approximate value and composition are?—F. B. E.

Answer.—The specimen—which is rather a small one—bears some

resemblance to asphalt, though it is not true asphalt. It is a hydrocarbon, but contains a large proportion of grit. It appears to be bituminous sandstone. Material like the specimen sent is worth at present about $3 a ton at point of consumption or use. It is, therefore, not an especially valuable material. What a deposit would be worth would depend on its extent, location, and the transportation facilities at hand. It would not stand a heavy freight charge.

Salary of Mine Superintendent.—What is the usual salary paid to a man who is capable of taking charge of a mining enterprise, prospecting and developing large claims? I mean a practical man, who is acquainted with different departments of work.—A. B. H.

Answer.—The salary of a mine superintendent depends on a good many conditions. The extent and importance of the mine, present or probable value, experience and standing of the officer himself, are all factors. These conditions vary so much that it is impossible to give any general average.

Measuring Air Currents.—Can you give me a rough-and-ready way of finding the quantity of air delivered through a mine shaft or passage?—J. B.

Answer.—The quantity of air passing per minute will be represented by the area of the passage in square feet, multiplied by the velocity of the current in feet per minute. The result will be the quantity of air delivered in cubic feet. To ascertain the velocity, where no instruments are available, some light body, such as smoke, is used, and the time it takes to travel a measured distance is noted. A puff of smoke from a small quantity of gunpowder ignited is convenient. Of course this method will not be exact, but a near approximation can be made.

Water Used in Concentrating Zinc Ores.—How much water is required in concentrating zinc ores in the Joplin Mining District in Missouri?—R.

Answer.—About 1½ tons of water are required to each ton of material, including all taken from the mine. This is equivalent to from 15 to 25 tons of water per ton of concentrates, according to the grade of the ore. As there is a scarcity of water in the Joplin Region—amounting to a very serious handicap for some mines—the water is stored and used over and over again. Nevertheless, even in these cases, the consumption of water in a mill treating 100 tons of ore a day of 10 working hours amounts to 50,000 gallons a day.

These figures are worth considering by investors in the stocks of certain zinc companies.

Cyanide Leaching Vats.—What is the material most generally used for leaching vats in the cyanide process?—J. P. F.

Answer.—Wood and iron or steel are most used for the purpose named. Which material is employed depends largely upon the relative cost; and this again depends upon the location of the works, cost of transportation, and timber available for use. In the Cripple Creek District in Colorado steel vats have generally been used as being cheaper than wood. In most places in this country wooden vats have been used. The objection made to them that they absorb cyanide and gold from the solutions has not been found a serious one. The chief objection made to iron and steel tanks is that they are apt to be corroded, and are difficult to calk when a leak starts. In Australia and New Zealand vats have been made of masonry, lined with hydraulic cement. (See "Engineering and Mining Journal," November 12th, 1898, page 575).

Consult Bosqui's "Practical Notes on the Cyanide Process," where the question of material for vats is fully discussed.

Nitrate of Soda.—Would it pay at this time to work nitrate deposits in this country? The deposits are in a region where there is plenty of timber and water, but are about 60 miles from the nearest railroad. What is the market price at the present time? Also, where can I get a treatise on the separation of the nitrate from the impurities with which it is mixed?—A. B. H.

Answer.—Whether it would pay to work nitrate deposits in this country depends upon the extent of the deposits, quality, location and other considerations, partly technical, but chiefly commercial. The supply of this material at present comes almost entirely from the west coast of South America. The total imports into the United States last year were 147,494 long tons. The current price in New York is $1.75 per 100 pounds.

See also "Engineering and Mining Journal," September 23d, 1899, page 372. A full account of the Chilean nitrate beds and the methods of working them appeared in "The Mineral Industry," Volume VI. (1898). An article on nitrates also appeared in Volume VII. of the same work.

Siphons for Drainage.—Do you know of the successful application of the siphon in the drainage of a mine? Could it be done? What are the limitations?—D. H. G.

Answer.—The limit of capacity of a siphon in raising water is the atmospheric pressure. A siphon can only lift water to the height corresponding to the pressure of a column of air of equivalent size. Theoretically this height is 33 ft. at sea level; practically it is not over 25 ft., owing to leakage of joints and other imperfections in apparatus. In a shaft or pit one could hardly depend on lifting water more than 20 ft. Where it is used it is best to have the long end several feet lower than the bottom of the hole. Fill the hose with water by plugging the short end, moving the hose to one side and underrunning it to get all the air out; carry the long end down hill, remove plug from short end under water, and there you are. Water should flow till the hose leaks or sucks air at the bottom. Do not have too sharp a bend at top of shaft.

PATENTS RELATING TO MINING AND METALLURGY.

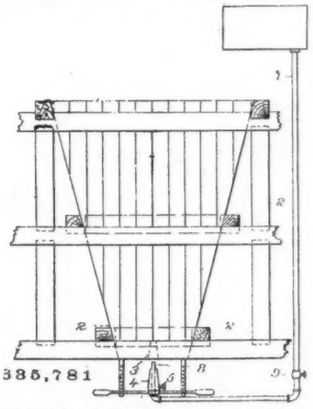
UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending October 31st, 1899.

635,774. STORAGE BATTERY. Arthur Heinemann and Wilhelm Schafer, Berlin, Germany. A storage battery comprising a vessel, electrodes coated with an active material, and molded partitions made of pulverized non-conductive vegetable charcoal completely filling the spaces between said electrodes and the spaces between the latter and the battery vessel, said partitions saturated with the electrolyte.

635,781. ORE FEEDER. Robert H. Jeffrey, Pinos Altos, Mexico. In combination, a hopper provided with a lower tapered discharge-opening,



a water-supply pipe terminating in a nozzle, vertically adjustable with respect to said discharge-opening, and a conical plug adjustable upon the nozzle.

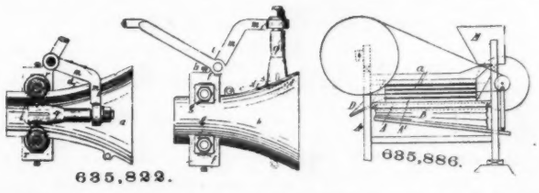
635,782. PLUMB-LEVEL. John J. Jordan and Clifford L. Wallace, Kyle, Tex. A level, comprising a stock having a socket or recess formed therein, a dial-plate fitted in the recess, spaced in front of the back thereof, and provided with a central opening, a block or shoulder provided upon the back of the recess and located centrally thereof, a disk fitted to the outer end of the block or shoulder, received within the central opening of the dial-plate and forming a circular slot therewith, and an index-finger having a traveling pivot.

635,793. PROCESS OF TREATING ORES CONTAINING PRECIOUS METALS. Frederick W. Martino and Frederic Stubbs, Sheffield, England. The treatment of ores or tailings by finely dividing the ore, mixing it with calcium carbide and moistening the mixture with water.

635,798. HYDRAULIC DREDGE. Bernard H. Muehle, Detroit, Mich. A dredge-hull provided with a pivotal spud at one end, and one or more spuds or poles sliding up or down within hinged and oscillating sleeves at the opposite end, these parts being so arranged that the hull and excavating device may be moved laterally about the pivotal spud.

635,847. HYDRAULIC ACCUMULATOR. Chauncey N. Dutton. In a two-pressure hydraulic accumulator, the combination of a support, a lower weighted hydraulic member, an upper hydraulic member adapted to act on the lower member, and a valve-controlled pipe connecting the two members.

635,822. PIPE-WELDING APPARATUS. Carl Twer, Eschweiler, Germany. The combination of a bell, adjustable rollers arranged at opposite sides and penetrating through the wall of the bell, the bearings of one of said rollers being each provided with a lug, said lugs



being the bearings for a shaft, a shaft mounted in said bearings, a bent lever secured to the shaft, the free extremity of said lever being provided with a conical opening, an elastic mandrel secured in the conical opening of the lever, and a hand-lever mounted on the end of the said shaft.

635,886. APPARATUS FOR CONCENTRATING DRY PLACER MATERIAL. Antoine Chaumeil, Caborca, Mexico. The combination of a laterally and longitudinally inclined flexible surface or support carrying a plurality of riffle-bars disposed parallel with the sides of the surface or support, a hopper arranged to deliver material at the higher end of the surface or support, spouts at the lower end and along the lower side of the surface or support, and a device arranged to deliver air-blast against the under side of the surface.

635,890. DREDGING-MACHINE. Samuel A. Hill, Atlantic City, N. J. The combination of a pump; a suction-pipe vertically movable with

relation to said pump; a revoluble cutting-shaft; means for revolving said shaft; means for transversely reciprocating said shaft with relation to the pump; and means to adjustably shift said shaft in the direction of its length and with relation to the pump, whereby the described adjustment of the cutters with relation to the dredge may be effected without moving the pump.

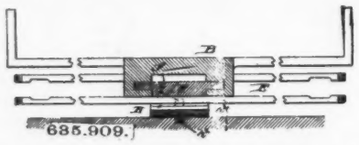
635,894. CARBURETER. Clarence M. Kemp, Baltimore, Md. The combination with an oil-supply tank, of a vaporizing-pipe leading to and discharging within said tank, an oil-pipe leading from said oil-tank and entering the vaporizing-pipe at a point wholly outside the tank, means for forcing oil through the said oil-pipe, and a gas-discharge pipe for the tank.

635,905. MINING DRILL. William R. Wallace, Mount Vernon, Ill. The combination with a sectional boxing having a plane unthreaded bore, and means for holding the sections of the boxing in locked

635,905.

position, of a feed-nut having an unthreaded exterior face, means for restraining the nut against endwise movement in the boxing, a bit-shaft engaging with said feed-nut, and a latch device adapted to be connected to said feed-nut to hold the latter in a stationary position within the boxing or to permit said feed-nut to rotate in the boxing with the bit-shaft.

635,909. MINING MACHINE. Henry H. Bliss, Washington, D. C. The combination with a chain provided with laterally-acting cutters, and a carriage having the frame at the front supporting the



635,909.

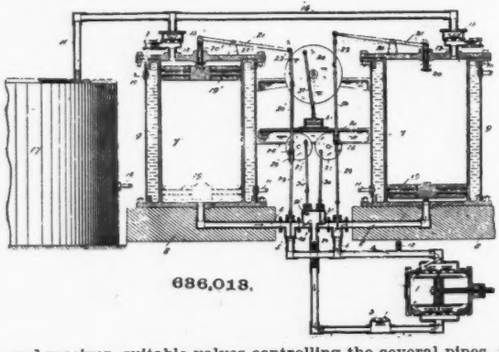
a carriage having the frame E, E, F, at the front supporting the chain, and of a vertical dimension less than the kerf produced by the cutters, of a frame-support below the front end of the carriage and adapted to ride on the floor of the cut to hold the front end of the carriage in proper horizontal lines.

635,911. PROCESS OF IMPROVING QUALITY AND INCREASING QUANTITY OF ILLUMINATING COAL-GAS. Frederick Bredel, Milwaukee, Wis. The process consists in passing purified coal-gas through hot retorts having a minimum temperature of a dull-red heat.

635,935. BRICK-KILN. Fritz Koch, St. Paul, Minn. The combination with a fire-box and chimney and burning-chamber, inner and outer walls oppositely inclined, canals between said walls extending the length of the kiln and connecting the interior with the chimney.

635,945. APPARATUS FOR THAWING EXPLOSIVES. William J. Smith, San Francisco, Cal. An inner tank for holding the frozen explosive, placed in an outer tank which holds the heating medium.

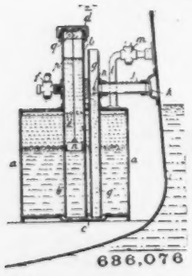
636,013. AIR-COMPRESSOR. George W. Tolle, St. Louis, Mo. A suitable air-pump, a storage tank or receiver, two communicating cylinders interposed between the pump and receiver, pipe connections establishing communication between the cylinders, and the pump, a piston for each cylinder, pipe connections between the cylinders



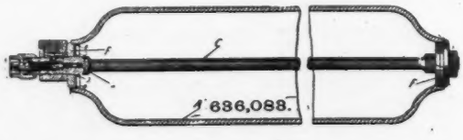
636,018.

and receiver, suitable valves controlling the several pipes, the pump being adapted to force atmospheric air under the piston of either cylinder, and subsequently circulating such compressed air alternately from one cylinder to the other, and a check-valve located in the path of the supply-pipe of the pump for permitting the flow through the pump of additional atmospheric air into the cylinders to effect the reciprocation of the pistons and forcing the air in front of such pistons into the receiver.

636,076. APPARATUS FOR STORING HYDROCARBONS OR OTHER LIQUIDS. John Smith, London, England. A storage-tank for liquids, provided with a discharge-tube extending from the bottom



636,076



636,088.

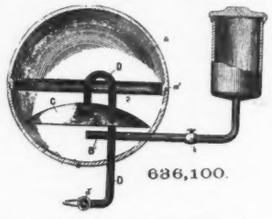
or near the bottom thereof to a point above its top and provided with lateral inlet-perforations below the top of said tank, through which perforations the stored liquid flows from the tank into said discharge-tube and rises therein, a separate inlet-pipe for the liquid to be stored, and a tube or pipe opening into the lower end of said tank for the admission and discharge of a liquid of greater specific gravity than the liquid to be stored.

636,083. VESSEL FOR CONTAINING COMPRESSED OR LIQUEFIED GASES. Alfred Sweetser, London, and Andrew Pringle, Bexleyheath, England. The combination with a gas vessel, of means for closing the neck, and a tension-rod arranged to hold said means against the vessel and to stretch and so afford relief when the internal pressure becomes excessive.

636,084. GAS-PRODUCING APPARATUS. Maurice Taylor, Paris, France. The combination with a retort and fuel-chamber, of a jacket inclosing the same, a door closing the lower end of the jacket, bell-crank levers each having an arm extending underneath said door, and set-screws tapped through the other arms whereby said levers may be adjusted.

636,095. SEMI-DRY OR SEMI-PLASTIC BRICK MAKING MACHINE. Adam Adams, Petersborough, England. The combination of a continuously-revolving cylinder, molds carried by said cylinder, bottom plungers for said molds, a central stationary cam for operating said plungers to give the bottom pressure and eject the brick, traveling oscillating segments and top plungers carried thereby to give the top pressure, rotating eccentrics, levers and toggle-levers connected with said eccentrics and carried by said segments and adapted to operate the top plungers.

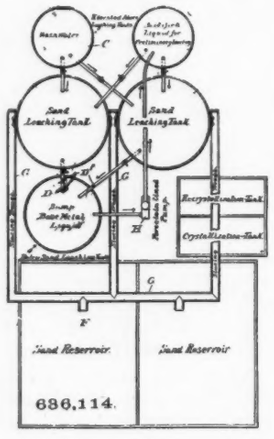
636,100. BLOWPIPE. Lloyd Austin, Anaconda, Mont., assignor of one-half to John B. Salter, same place. The combination of a portable heating-chamber, a dome therein dividing it into upper and lower



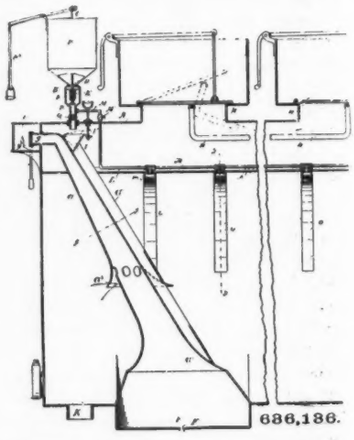
636,100.

storage and heat chambers, a liquid-fuel reservoir, a supply-pipe connecting the reservoir with the chamber below the dome, and a gas-exit pipe connected to the dome and leading to a jet-burner exterior to the heating-chamber.

636,114. PRELIMINARY TREATMENT OF ORES OR TAILINGS BEFORE CYANIDING. James S. Cain and August Soderling, Bodie, and Smith P. MacKnight, Bishop, Cal. The process consists in first



636,114.



636,136.

leaching the ores or tailings in a weak solution of nitric acid, subsequently leaching the same in an alkaline solution, and finally leaching the same in a cyanide solution.

636,136. VACUUM TANK AND WATER LIFTER. Ludwig L. Gross, Petaluma, Cal. The combination of a tank having inlet and outlet openings, a source of supply for gas-producing material, a measuring-chamber intermediate between the source of supply and the vacuum-tank and adapted to discharge the gas-producing material into said tank, a valve-stem having valves fixed to it within the measuring-chamber, with such relation to each other that when one valve is closed, the other is opened, a spring by which the lower valve is normally closed and a lever by which the upper valve may be closed and the lower one opened, and means for producing an explosion in the tank to create a vacuum.

636,157. APPARATUS FOR MANUFACTURING CHAINS. Alfred Masion, Brussels, and Jacques Dethier, Dampremy, Belgium; said Dethier assignor to Emile Gobbe, Jumet, Belgium. An apparatus for the manufacture of chains by winding up a metallic wire, said apparatus comprising a rolling ring or roller in two parts with an opening for the reception of a previously-formed link, in combination with three tangential cylinders.

636,180. FLUID-COMPRESSOR. Francis M. Rites, Ithaca, N. Y. The combination, with a valve device controlling the ports of the compressing-cylinder, of a shifting eccentric for operating the valve device, a governing device operated by variations in the relative pressures in the compressing-cylinder and in the reservoir, or outlet-passage, of the compressor, for controlling the adjustment of the shifting eccentric, and a passage controlled by a continuously-operated valve connected with the main valve of the compressor for admitting fluid under pressure from the compressor-cylinder to the governing device.

636,193. CONTINUOUS KILN OR FURNACE FOR BURNING BRICKS, ETC. Edward C. Brice, Chicago, Ill. A furnace or kiln comprising a tunnel, fire-boxes arranged on the sides thereof, and having throats or exit-passages leading upward toward the arch of the tunnel, longitudinal heat-flues arranged in the side walls intervening the fire-boxes and tunnel, lateral passages leading from said flues into the tunnel, and other passages for delivering air to support combustion along the side angles of the tunnel.

636,212. ELECTRO-DEPOSITING-CELL. Marcel Perreur-Lloyd, London, England, assignor to the Electrical Copper Company, Limited, same place. The combination with an anode and a rotary cathode, of a normal animal skin or membrane arranged in light contact with the rotary cathode and freed from all matters which can become soluble or adhesive at or below 60° F.

PERSONAL.

Mr. J. J. Sandhem, of London, Eng., has been visiting Republic, Wash.

Mr. D. Soldini, mine owner, of Cornucopia, Ore., is in San Francisco.

Count Raoul Duval, who is interested in California mining properties, is in San Francisco.

Mr. Geo. M. Bowers, of Kingman, Ariz., one of the owners of the Night Hawk Mine, is in San Francisco.

Mr. Geo. K. Fischer has gone to Silver City, N. M., to take charge of construction for the Santa Rita Mines.

Mr. John Keegan, superintendent for Capt. J. R. De La Mar, has been in Denver, Colo., looking up machinery.

Mr. J. B. Johnston, of Rossland, B. C., one of the owners of the Mountain Iron claim, has been visiting Republic, Wash.

Mr. Arthur L. Pearse, of London, one of the largest stockholders in the Mammoth-Collins Mine, has been in Tucson, Ariz.

Capt. James Piper of the Tilden Mine at Bessemer succeeds Capt. Samuel Mitchell in charge of the Negaunee Mine at Negaunee, Mich.

Mr. W. H. Edgar, president of the Dearborn Drug and Chemical Company of Chicago, Ill., has returned from a business visit to Honolulu.

Mr. C. E. Watson, of Carson, Nev., has been appointed superintendent of the Almono Mining Company in Antelope Valley, Mono County, Cal.

Mr. Thomas F. Walsh, owner of the Camp Bird Mine at Ouray, Colo., has gone to Washington, D. C., where he will remain during the winter.

Mr. H. G. Murray, who was superintendent of the Lightner Mine in California, has gone to Korea in the employ of an Oriental mining corporation.

Mr. John Hays Hammond, the well known mining engineer, was booked to leave Liverpool for New York on November 15th on the steamer "Teutonic."

Mr. S. N. Chauvenet, who recently resigned as manager of the Virginia Portland Cement Company, is manager of the Sheridan furnaces at Sheridan, Pa.

Mr. Edward Kane, who has been superintendent of the Ford Mine at San Andreas, Cal., will take charge of the Oro Fino Mine in Big Canyon, El Dorado County, Cal.

Mr. Lew E. Aubury, of Los Angeles, consulting engineer of the American Exploration Company of New York, has examined a number of mines in Mohave County, Arizona.

Prof. Wataru Watanabe of the Engineering College at the Tokyo, Japan, Imperial University, was at Denver, Colo., a few days ago. He is visiting different metallurgical works in the mining States.

Mr. H. E. Raymond, who represents the General Electric Company, is at Charlotte Plains, Australia, supervising the erection of an electrical plant for the Deep Leads Electrical Transmission Company.

A certain J. H. Smith, who visited New York in March, 1899, and Portland, Ore., in April, is wanted. Said Smith was also known, we believe, under the name of George Ryall, of Kalispell, Mont. We shall be obliged to our readers for any information as to his present whereabouts.

Mr. C. S. Knight, vice-president and general manager of the Siemens & Halske Company of America, has resigned to take up other work in New York, for a syndicate which controls various companies. Mr. Knight's successor will be O. S. Lyford, Jr., formerly electrical engineer of the Siemens & Halske Company.

Mr. William C. Albers, of Juticalpa, Honduras, Central America, has been in St. Louis, Philadelphia and other cities, buying mules and machinery for use in the gold mines with which he is connected. He is general superintendent of the El Guasimo and Concordia Mining Companies, in the Department of Olancho, Honduras, but was formerly a citizen of St. Louis.

The present address or any information concerning Mr. Joseph Paxton is desired by members of his family, and we shall be greatly obliged to any of our readers who will send such information to the office of the "Engineering and Mining Journal." Mr. Paxton, who was a mining and civil engineer, was in Zacatecas, Mexico, about 6 years ago and was then about to join a party who were going to survey a road to a new mining district in the mountains. Mr. Joseph Paxton is an Englishman, 37 years old, 5 ft. 10 in. tall, stout build, brown beard and mustache. He was formerly in the service of the Canadian Government and went to Sitka before the discovery of gold in the Klondike.

OBITUARY.

Matthew B. Hayes, better known in the mining world, as Mat Hayes, one of the old-timers in Colorado, died at Denver on November 9th, aged 64 years. He was born in New York and came to Colorado in 1865 to superintend the old Gregory Mine, then one of the famous bonanzas of Gilpin County. He was known for his uprightness in business relations and had many friends.

George F. Kellogg, who died recently in Anaconda, Mont., was one of the old-time mining men of the West, having for many years been connected with companies in California, Nevada and Montana. He was 65 years of age, and was a native of the State of New York. In 1853, at the age of about 19, he went to California, and after a short time there he went to the Comstock, where he was employed 20 years in charge of different mines, but most of his time was devoted to the interests of the Bonanza firm, composed of Mackay, Flood, Fair and O'Brien. He was also employed by Senator Sharon and others in working the mines in Gold Hill, Nevada. Mr. Kellogg went to Butte about 20 years ago, and for 12 years was in charge of the Lexington Mine at Walkerville. He had been in Butte ever since with the exception of 2 years, when he was in charge of the Hope Mine at Basin, and the last 3 years, when he was in British Columbia, experting mines for a British syndicate.

William Franklin Durfee, an engineer and inventor, whose home was at New Bedford, Mass., died November 14th in the State Hospital at Middletown, N. Y. He was born in New Bedford, Mass., November 15th, 1833. After a practical mechanical training at home he took a special course of study at the Lawrence Scientific School of Harvard University. In 1853 he became an engineer and architect in New Bedford, and for 5 years served as city surveyor. In 1861 he was sent to the State Legislature, where he introduced a resolution requesting Congress to repeal "all laws which deprive any class of loyal subjects of the Government from bearing arms for the common defense." This is believed to have been the first formal proposition for arming negro troops. Mr. Durfee designed a gun for naval use, and in June, 1862, went to Lake Superior to test the suitability of the iron ores there for the manufacture of steel by a method invented by William Kelley. He succeeded in producing some ingots of steel, from which on May 25th, 1865, were rolled the first steel rails made in this country. He then established at Wyandotte, Mich., the first analytical laboratory built as an adjunct to steel works in the United States, for the purpose of studying the Bessemer process and the use of the regenerative furnace. During 1876 he was one of the judges of machine tools for wood, iron and stone working at the Centennial Exposition in Philadelphia, where he received a medal. He afterward built at Ansonia, Conn., the first successful furnaces for refining copper by the use of gaseous fuel. In 1886 he became general manager of a company which controlled patents for the production of wrought iron and steel castings. Mr. Durfee was a member of several scientific bodies.

SOCIETIES AND TECHNICAL SCHOOLS.

Harvard University.—The family of John Simpkins, '85, has given, in his memory, the sum of $20,000, to be used in equipping mining and metallurgical laboratories. The new laboratories will occupy the space in the Roche building formerly used as the baseball cage.

Princeton University.—The required and elective courses for the current year show an addition of nearly 30 new ones over last year and open to the students of the academic department 325 courses. Perhaps the most important addition is the extension of opportunities in chemistry for academic students looking forward to medicine or chemistry as a profession. The new courses number 6 and are all offered by Prof. Neher. In the School of Science, assistant professor H. S. S. Smith has been appointed to full professorship of applied mechanics, and assistant professor W. B. Harris has been made full professor of geodesy. Dr. L. H. Reid has been appointed instructor in mathematics, and Mr. W. H. Detrich instructor in civil engineering. The total number of accessions to the library for the year, by gift and purchase, is 18,380 volumes.

American Chemical Society—New York Section.—A regular meeting of the section was held at the rooms of the Chemists' Club on November 10th. Dr. William McMurtrie read a paper on the year's progress in applied chemistry. He paid especial attention to the use to which ozone was applied and the many improvements which have been made in its manufacture. He also dwelt on the fact that in liquid air there have been many improvements made, and that there was hardly a doubt but that it would soon be manufactured in commercial quantities. He also referred to the different processes which are now being employed in the manufacture of white lead and the strides that have been taken by manufacturing chemists in putting a superior article on the market. The methods of manufacturing coke and utilizing the by products were also discussed.

The other papers read were: A. J. Rossi, "A Practical Electric Furnace"; M. Trubek, "The Technical Analysis of Licorice Paste"; P. A. Levene, "On the Chemistry of Mucin."

Engineers' Club of Philadelphia.—At the meeting on November 4th, 78 members and visitors were present. Messrs. A. B. Eddowes, Richard Khuen, Jr., and H. H. Patterson were elected to active membership, and Mr. L. C. Dilks was elected to junior membership.

Prof. Wm. H. Burr gave an extempore lecture on "Long-Span Bridges." The stresses and disposition of the metal in long-span simple truss bridges were first considered and the statement made that while the limit of span in this type has not yet reached 600 ft., it is possible that in a few years this length may be greatly exceeded. The adaptability of the cantilever for long spans was next discussed and its disadvantages were explained. The stiffened suspension bridge was then considered in some detail and its similarity to a stiffened arch in the matter of analysis was pointed out. The special features of each of these types were illustrated by diagrams and photographic views of bridges projected by the electric lantern.

At the close of a general discussion which was participated in by Messrs. Edgar Marburg, James Christie and John Stirling Deans, a vote of thanks was tendered to Prof. Burr.

INDUSTRIAL NOTES.

The American Impulse Wheel Company, of New York City, has shipped an entire transmission plant to Sweden to be used for electrical purposes.

The S. W. Luitwieler Company, of Los Angeles, Cal., sold in October 4 Foos gas engines, one of them a 32-H. P. engine for the Capital Oil Company of Santa Paula, Cal.

The Brown Hoisting and Conveying Company, of Cleveland, O., is to furnish the Carnegie Steel Company, Limited, ore handling machines and storage bins at the Carrie furnaces.

The shops of the Truax Manufacturing Company at Denver, Colo., are kept busy supplying the demand for its ore cars. Recently shipments of cars were made to Monclova and to San Gil, Mexico.

A contract has been given Fraser & Chalmers, of Chicago, Ill., by S. S. Fowler, of the Ymir Gold Mines, Limited, of Ymir, B. C., for machinery for a 40-stamp mill, in addition to the present mill, making a total milling capacity of 80 stamps.

The American Steel and Wire Company is pushing repairs on the furnaces at Crown Point, N. Y. The smaller furnace will probably be ready during December and is expected to make spiegeleisen. The second stack will blow in in January.

A large bar mill building, also a boiler house, both of steel frame construction, are to be added to the W. Dewees Wood Company's plant at McKeesport. Wm. B. Scaife & Sons, Pittsburg, Pa., are manufacturing and erecting the buildings.

It is said the Grossen Iron Works will locate at Eddystone, near Chester, Pa. Plans have been under way for some time. This concern, organized some months ago, with American and German officers, will manufacture guns, gun carriages and heavy ordnance.

The Buffalo Forge Company of Buffalo, N. Y., will furnish hot blast heating and ventilating apparatus for the Berlin, Germany, shops of the Garvin Machine Company of New York City. F. Engalls of Berlin has been in New York, ordering machinery for the works.

H. J. Putman & Company of Minneapolis, Minn., makers of the Putman boots, whose merits are known by engineers and prospectors throughout the northwest, report increasing sales of waterproof footwear to dealers in mining camps and to the large logging companies.

The demand for the Wilfley concentrators has lately been so heavy that the Mine & Smelter Supply Company has leased and fitted up large shops in Denver, where they are being manufactured under the personal supervision of Mr. Wilfley, the inventor. Forty-eight Wilfley tables are now in use in the Joplin zinc-lead district handling sludge from the jigs in the mills.

The Hall Steam Pump Company, of Pittsburg, Pa., has just shipped a large order for air compressors to Vladivostock, Siberia, and is in duplicate the large compressors built at Moline, Ill., the largest in the world. Work is now progressing on an air compressor for London, Eng.

The South St. Louis Foundry Company, of South St. Louis, Mo., recently shipped a carload of machinery to the San Sebastian Milling and Mining Company, Old Mexico, consisting of one pair 50-H. P. hoisting engines and one 80-H. P. boiler. The company is shipping a rock crusher to the Falling Springs Quarry and Cement Company, St. Louis, and has an order for a large pair of 60-H. P. coal hoist engines for Cherokee, Kan.

Receivers for the Beam Converting Furnace Company and the Cripple Creek Beam Milling Company are applied for in a suit filed in Colorado, recently, by George A. Bristol and Clay S. Steele. The defendants include H. A. Frambach and Frank S. Weigley, and it is said of them that they are dissipating the company's assets, borrowing money and selling shares of stock without the consent of the directors.

The Pressed Steel Car Company is to build a large plant at Allegheny, Pa., on the land recently bought from the Baker Chain and Wagon Iron Manufacturing Company. The company is building at its new works at McKee's Rocks, for the Pennsylvania Railroad, 1,000 of the largest coal cars ever made, of the self-clearing hopper variety and with a cubic capacity of 2,055 ft., to carry 110,975 lbs. of coal. The works at McKee's Rocks will soon have a daily capacity of 30 cars.

The Union Steel Company, chartered at Pittsburg, with a capital of $1,000,000, will, it is stated, locate its plant in the Monongahela Valley in the Pittsburg District. The firm will erect a blast furnace of about 600 tons capacity, a basic open hearth plant of about 1,000 tons daily capacity, a rod mill and wire mill. The contract for the engines is placed with the Southward Foundry & Machine Company of Philadelphia and the E. P. Allis Company of Milwaukee; for the rod mill, to the Frank-Kneeland Machine Company of Pittsburg and for the rod mill building to the Shiffler Bridge Company of Pittsburg.

Announcement is made of the organization of the New York Air Compressor Company under the laws of the State of New Jersey. The capital stock of the company is $100,000, and a complete foundry and machine shop plant has been purchased on the line of the New York & Greenwood Lake Railroad at Arlington, N. J. Contracts have already been let for a full modern equipment of tools. It is intended to manufacture a complete line of air compressing machinery. The officers of the company are: J. W. Duntley, president; Alexander MacKay, vice-president; W. P. Pressinger, secretary and treasurer. The directors are J. W. Duntley, Alexander MacKay, W. P. Pressinger, William B. Albright, W. O. Duntley, Thomas Aldcorn and Austin E. Pressinger. The New York offices of the company are at 120 Liberty Street.

The Borden & Selleck Company of Chicago, Ill., has furnished the Pioneer Fuel Company, Duluth, Minn., several thousand feet of improved noiseless Harrison conveyors, screens, etc., for handling coal from boats to shipping bins and to storage sheds; also a cable elevated railway 1,200 ft. long with 13 automatic dump cars for handling bituminous coal from boats to storage, all the machinery being operated by electric motors. Geo. Lill & Company's coal dock on the north branch of the Chicago River has been equipped with Harrison conveyors, revolving disc screens, rope drives, car pullers, and scrapers, by the Borden & Selleck Company. The John A. Mead Company supplied 2 towers and hoisting engines and 2 automatic clam shell buckets for unloading vessels. The rail coal yard of Boyd-Stickney & Company, Chicago, has been supplied by the Borden & Selleck Company with Harrison conveyors, twin gasoline engines, scraping machines, coal screens, etc. The Borden & Selleck Company has completed Harrison conveyors for the North Western Fuel Company's new rail coal yard at Chicago, and installed one 100 ton 42 ft. railroad track scale and one 15 ton wagon scale of the Howe standard pattern.

The prospectus of the Sloss-Sheffield Steel and Iron Company, organized a few months ago, states that the properties to be controlled are: The Sloss Iron and Steel Company of Birmingham, Ala., having 4 200-ton blast furnaces, 30,000 acres of ore lands, 15,000 acres of coal land and 1,000 coke ovens; the Philadelphia Furnace of Florence, Ala., with a daily capacity of 200 tons of iron; the Ensley Furnace properties of Sheffield, Ala., 2 furnaces of 200 tons daily capacity; the Gulf Coal and Coke Company property of 25,000 acres of coking coal land; the Brown ore properties of West Point, Tenn., estimated to contain 20,000,000 tons of ore, and Russelville, Ala., 5,000 acres, partly developed. The Corona Coal and Coke Company property may also be acquired. The company is to have an authorized capital stock of $10,000,000 7% non-cumulative preferred stock and $10,000,000 common, of which $6,700,000 preferred stock and $7,500,000 common stock will be issued for the acquisition of plants and properties, repairs, opening new mines, new washing plants, new coke ovens, working capital, expenses of organization, and other cash requirements. The balance of the capital stock will be reserved for the erection of a steel plant and working capital, and for general purposes. The existing bonded indebtedness of the Sloss Iron and Steel Company is $2,000,000 6% bonds, $1,835,000 4½% bonds, and the properties of that company will be acquired by the new company subject to this indebtedness. For the purpose of providing funds for carrying out the plan it is proposed to sell for $2,200,000 in cash $2,200,000 preferred stock, and $2,200,000 common stock at par.

TRADE CATALOGUES.

A handy portable contrivance for punching and cutting by hand structural iron or steel, such as beams, channels, etc., is shown in a folder sent out by Henry Pels, of New York City, representing the Berlin-Erfurt Machine Works, Henry Pels & Company, of Berlin, Germany. Catalogues are sent on application.

As No. 66 in its "Record of Recent Construction," the Baldwin Locomotive Works, of Philadelphia, Pa., issues a 32-page pamphlet giving cuts and specifications of 12 steam locomotives and 2 electric locomotives. The steam locomotives are of various types and include those furnished for the Imperial Railway of North China, the Brahestad Railway, in Finland, and the Burma Railways Company. The catalogue is printed in French and English and dimensions and weights are given in millimeters and kilograms, as well as inches and pounds. This feature should be copied by all American machinery builders seeking business abroad.

A remarkably handy and comprehensive pocket book for hydraulic engineers is published by the Tight Joint Company of New York City, as a catalogue of the high pressure air and hydraulic fittings and flanges (Folly's patent) the company manufactures. Of the 81 pages in the pamphlet, 12 are given to a description of these fittings, the joint in which is made by a small lead collar cast in the fitting a few threads from the end. The tables, formulae and general information for builders of hydraulic plants were compiled by John Platt. They embrace a table of circumferences, areas and decimal equivalents; the strength of various metals, including safe loads of volts; working and test pressures; capacities of cylinders and rams; losses by friction; velocities of flow; friction in hydraulic rams; areas of valves, and a variety of notes on hydraulic pressure transmission. The pamphlet is about the best of its class that we have seen.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Oil Exports.—The Bureau of Statistics reports the export of mineral oils from the United States in October as follows: Crude, 5,705,985 gals.; naphthas, 2,794,874 gals.; illuminating, 66,794,272 gals.; lubricating and paraffin, 6,404,702 gals.; residuum, 1,438,332 gals.; total, 83,138,165 gals., against 79,524,827 gals. in October, 1898. For the ten months ending October 31st, 1899, the exports aggregated 797,929,971 gals., as against 844,602,871 gals. in the corresponding period last year, showing a decrease of 46,672,900 gals. in 1899. This falling off was due chiefly to the lighter shipments of illuminating oil.

ALABAMA.

Talladega County.

Jenifer.—This blast furnace, with a large tract of brown ore land, has been sold to W. H. Weller, the pipe manufacturer, of Gadsden, Ala., and Fred Hoffman of Milwaukee. Mr. Weller will be president of the new concern, and John E. Ware will be secretary and treasurer. The properties are at Jenifer. The furnace will be overhauled and put into blast and the mines will be worked.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Bunker Hill.—This mine north of Amador City is being put in order. The roads to the mines have been repaired.

Central Eureka.—On the 1,500 ft. level at this mine, south of Sutter Creek, drifts are being run both ways and the shaft is going down, having reached 1,550 ft. Some of the ore is quite rich, and good ore is found both in the shaft and drifts. The ore is crushed at the Zeila Mill.

Kennedy.—The new shaft at this mine near Jackson is down 725 ft. The management intends to sink deeply, crosscutting at intervals. J. F. Parks is superintendent.

Standard Electric Company.—The large power plant of this company on the Mokelumne River, 3½ miles above Jackson, burnt down on November 4th. The origin of the fire is said to have been in the transformers. The loss is estimated at from $20,000 up. Many mines which were expecting to put in electric power will have to wait awhile.

Inyo County.

(From Our Special Correspondent.)

Radcliff.—At this mine in the Panamint District, about 6 miles from Ballarat, the tramway has broken down, necessitating closing down the mill for about 60 days, but development work will continue with a full force of men. A contract has been made with the Vulcan Iron Works of San Francisco for a new plant.

Kern County.

(From Our Special Correspondent.)

Pinmore.—This low grade proposition, one of the Ashford group of mines about 1½ miles east of Randsburg, is reported to have been sold to Harrison & Godsmark for $1,500. The ledge is from 3 to 9 ft. wide, carrying rich bunches of ore.

Yellow Aster Mining Company.—The 30-stamp mill is running day and night with a good supply of water. One hundred and thirty men are employed, some developing claims south of the main workings. A contract to sink 400 ft. on the Nancy Hanks has been let.

Placer County.

Morning Star Gravel Mining Company.—At a meeting of the stockholders recently, it was voted to sell the mine at Auburn outright, a bid having been offered by the Big Dipper Mining Company, which owns the claims adjoining and up to whose lines the Morning Star has been worked. The price is to be on a basis of $17 per share, or $40,800. This money will be distributed among the stockholders. There is also said to be enough money in the treasury to pay each shareholder a dividend of $7 per share. The principal stockholders are the Coleman Brothers and Lieutenant-Governor Jacob H. Neff.

(From Our Special Correspondent.)

Azalea.—The tunnel at this drift mine near Blue Canyon is now in 2,230 ft. The development fund is raised by installments of 1c. per share, giving $400 per month.

Eureka Consolidated.—The main tunnel at this mine, 12 miles from Forest Hill, 3 miles north from Sunny Side, is in 3,155 ft. Felix Chappellet, Jr., is superintendent.

Golden West.—Seven hundred feet of tunnels have been run on the ledge on the North Fork of the American River near Blue Canyon, and a new tunnel has been started about 30 ft. above high water mark. A shipment of rails has been received. J. B. Knapp is superintendent.

Mayflower Gravel Mining Company.—A permit has been granted by the United States Debris Commission to work the McCall pit by the hydraulic process. Ten men have been engaged to clean out the ditch and repair the reservoir and pipe line. A contract has been let to build a dam. The property is north from Forest Hill.

San Diego County.

Lepidolite Mining.—It is stated that W. J. Schiffelin of New York has bought the privilege of mining lepidolite from 4 claims near Pala, from Rosalind O. Butterfield of Los Angeles and Nelson G. Douglass of Cape May Court House, N. J. Mr. Schiffelin agrees to take, beginning with 1900, such amount of lepidolite ore, not exceeding 2,000 tons a year, as he may order, and of a quality not inferior to that heretofore supplied. The price to be paid for the ore is $25 a ton f. o. b. cars Temecula, or $40 per ton f. o. b. cars or boat at New York. The owners agree that so long as Mr. Schieffelin shall order from them the minimum of 400 tons of lepidolite in each calendar year beginning with year 1900, no lepidolite ore from the mines shall be sold or disposed of to any other corporation or person. If so sold, the owners shall pay Mr. Schieffelin the sum of $400 a ton for each ton.

Shasta County.

(From Our Special Correspondent.)

In the Lowden-Friday copper properties, near Kennett, assays from a large ore body yield about $5 gold and silver per ton and 8.95% copper.

Westbrook & Purington are running a 200-ft. tunnel on the Oakland Mine in Muletown District. Development work in Muletown District is carried on extensively on 20 claims of different ownership.

Bennington.—This group of nine claims lo-

cated near Iron Mountain has been bonded for $25,000 to San Francisco parties. The property is now developed by about 600 ft. of tunnels, the ore bodies averaging 2½ ft. in width. Extensive improvements are contemplated.

Hearne Group.—This property, comprising the Golden Age, Addenda, Lookout, Sunny Side, Grand View and Last Chance claims, located on Squaw Creek, 6 miles from Kennett, are being developed by C. D. Calvin and John Fillus, under the name of Shasta King. Mr. Galvin has filed a water right on the South Fork of Squaw Creek for 500 in. of water for milling and mining purposes.

Summit.—At this mine the contractor, L. F. Barlow, has completed 200 ft. of the 450 ft. upraise. The country rock and much of the vein matter being tough diabase, and the upraise being inclined, progress has been rather slow, but is now at the rate of 8 ft. per 24 hours, with the aid of a Cummings air compressor and drill and three shifts of men. The large kidneys of rich ochre ore, extracted above, will soon be met in the upraise, if they continue downward.

Siskiyou County.

(From Our Special Correspondent.)

Gold Run.—At this mine, 8 miles south from the forks of the Salmon, men are repairing the different levels and chutes. The new pumping and hoisting works have not yet arrived from San Francisco.

Ironsides.—A rich strike has been made at a depth of 100 ft. in the mine on the divide between Greenhorn Gulch and Sherry Creek. Arrangements are being made to develop the property on a large scale.

Yreka Creek Dredging Company.—This company has begun work by digging a basin for the dredger on the Booth property, north of the Hawkinsville school house, from which work will continue north 2 miles to Yreka. Plenty of water is available.

Toulumne County.

(From Our Special Correspondent.)

Hazel Dell.—This property has been developed by a 130 ft. tunnel, with 200 ft. of drifts on a 4 ft. vein of good ore, and an upraise of 200 ft. in another 50 ft. will reach the surface and ventilate the mine. Ten men are employed. The mines are 9 miles north of Soulsbyville, and are owned by the Jubilee Mining Company.

Little Wonder.—At this mine, 2 miles north from Big Oak Flat, a crosscut into the hanging wall has struck a new vein of ore said to be rich in free gold and sulphurets. Milligan and McCallum are superintendents.

Trinity County.

(From Our Special Correspondent.)

The Bergin gravel property, 650 acres, and a Chinese company's property of 150 acres, with water right, have been bought by Chicago, New York, and San Francisco men, 5 in all, who are putting in a hydraulic plant. A syphon 4,000 ft. long and 2,000 ft. additional 22-in. steel pipe are being placed. A bed rock ditch 2¾ miles long has been opened. The gravel is 5,000 ft. long, 100 ft. deep and 650 ft. wide. The ditch has a fall of 13 ft. to the mile. The dump is 605 ft. into Trinity River. In this section of the State hydraulic mining is not inhibited, because the debris is not carried into any navigable water nor does it cover ground valuable for ranching.

COLORADO.

Boulder County.

Big Five.—The new blower for the mine at Ward has arrived and will be installed in the adit tunnel 2,300 ft. from the mouth. It has a capacity of 5,000 cu. ft. of air per minute.

Cold Spring.—This Gold Hill company is contemplating the erection of a concentrating mill on its property on Left Hand Creek.

Leviathan.—This tunnel, Ward District, is now in about 400 ft. Work will continue.

Mountain View.—This claim at Ward is to be equipped with a new hoist and sinking will be pushed.

Struggler.—This claim at Ward is being developed with 18 men. The tunnel level is being driven east, the 250 ft. level west and the 350 ft. level east and west. All are in ore.

Victoria.—This mine at Gold Hill is shipping about 100 tons of smelting ore per week.

Chaffee County.

Anaconda.—A 40-H. P. hoist is being installed on this property at Turret and a shaft house is being built. At the 100 ft. a nice streak of sulphide ore assays from $30 to $60 per ton.

Gold Bug.—Drifting and crosscutting on both the 85 and 200 ft. levels are carried on and some very good ore is hoisted. The property is managed by Mr. Esperson of Turret, and about 16 men are employed.

Golden Wonder & Vivandiere.—Mr. Simpson of Chicago, one of the owners, was in Turret recently. Machinery ordered in Denver, consisting of hoist compressor, air drills, etc., will be set up on the Vivandiere shaft, and aftive work will start. Fred Karger will have charge.

Lailah Rookh.—This property at the head of California Gulch, recently sold to W. W. Fay, of Buena Vista, has been surveyed for patent.

M. & W.—This property has closed down after working a short time. It has a small vein carrying very high values and is owned by Cripple Creek people.

Queen City.—This property, near Manoa, is to be equipped with a steam hoist and pump. It is owned by Illinois people.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—J. Hilton to W. G. Wheller, ⅛ interest Isabella lode; G. G. Newcomb to W. H. Newcomb, 2/5 interest Huckleberry Finn lode; Cripple Creek, Pine Creek & West Creek Gold Mining Company to L. S. Whitney, Sheller lode; F. G. Hegmer to Cripple Creek & Pine Creek Gold Mining Company, Flora P., Aunt Julia, Little May and Hegmer lodes and Hegmer placer; N. Cavaccovich to W. A. Hopkin, Zara lode; L. D. Hobson to H. E. Corn and M. W. Tanner, Bertha lode, consideration $1,000; S. E. Roberts to Gilpin & Cripple Creek Mining Company, the Trigomar lode, consideration $9,000; E. W. Williams and W. A. Joyce to Hal Sayr, the Badger lode; West Wyandotte Mining Company to H. P. Lowe and P. S. Dines, the Topeka, survey No. 518.

Barnes.—A new shaft house 28 by 54 ft. is being built and a 30 H.P. double cylinder friction hoist will be installed by owner, B. Lake, Central City, Colo.

Heavy Receipts of Machinery and General Activity in County.—More new machinery is being received than for a like period for several years. Many properties are starting up anew, and the Gilpin Tramway Company is obliged to work nights to get the ore to the mills. This company is extending its tracks to the Fourth of July and University Kansas mines.

Little Fortune & Mingo.—Cripple Creek parties have leased their properties in Lake District from Drake Brothers. The first named will be cut through the Drake tunnel and the Mingo will be worked through a shaft. E. Drake, Central City, Colo., is owner.

Notaway Gold and Copper Mining Company.—A 24 H.P. Fairbanks, Morse & Company's gasoline hoist is now being installed on the Notaway claim. The shaft house is being enlarged to 24 by 50 ft. A. J. Vivian, Central City, Colo., is manager.

Perkey-Justice.—Lessees are taking out some good ore from this claim at 300 ft. and are making heavy shipments.

Gunnison County.

The Fairview, Yellow Jacket and Eureka lodes, 6 miles west of Crested Butte, have been transferred to Williams & Murphy of Denver for $6,000. The claims are developed and are being put in shape for next spring.

Black Queen.—This mine near Crystal has developed recently the richest ore body ever encountered in the mine.

Lake County—Leadville.

(From Our Special Correspondent.)

Leadville Zinc Shipments.—Jacobson & Company of New York are arranging for another shipment of zinciferous ores and concentrates to Belgium.

A. Y & Minnie.—Douglass & Newton this month will ship over 600 tons of good crude ore and the same amount of concentrates which carry 30 to 35% lead.

Chippewa Lease.—This proposition on Breece Hill is under the direction of R. B. and Norman Estey. The base of operations is on the Lady Jane claim, where 2 shafts are going down. A third is to start on the Wade Hampton. The 3 shafts are to catch the ore shoots of the Ballard and the Penn.

City Mining Company.—At a meeting of nearly 100 business and mining men, committees were appointed to consider the organization of this company, planned after the Home Mining Company. The ground is downtown territory on which about 300 people reside. The idea is to obtain leases on the mineral rights and allow owners to take the first stock in the concern. It is estimated that $250,000 would place the proposition on a paying basis.

Home Mining Company.—Shipments are 250 tons a day, mostly from the Penrose. The east drift at 250 ft. struck porphyry, but this proved an intrusive tongue and ore has again been encountered. An upraise 35 ft. still shows ore. The ore blocked out nets $20 a ton. In the Starr work is going on at the 500 ft. level. The ore is a streak of silver-lead material running in some instances several thousand ounces to the ton, and is sacked.

Leadville Ore Output.—The tonnage is 2,500 tons per day, all classes of ore, which could be increased were it not for the scarcity of ore cars.

M. N. Fraction.—Thirty tons a day are shipped from the sulphide ore body. The shaft went through 40 ft. of low grade iron sulphide and then opened 8 ft. of shipping stuff. A shoot of lead ore has been uncovered which assays 57% lead and 40 oz. silver, with a small fraction of gold.

Neusitz Placer.—This unexplored territory west of the city has never been developed. Papers are being drawn up for a long time lease and bond to New York parties, and it is stated that about $40,000 is to be expended in sinking 2 deep shafts and exploring.

Nubian Mining Company.—The contractors are sinking the new shaft on the Midland, which at 350 ft. is still in porphyry.

Weldon Mining Company.—Both shafts are worked, furnishing 40 to 50 tons per day of a good lead ore, while occasional shipments of iron ore are made.

Montezuma County.

Timberline.—This mine in East Mancos District has begun shipping. The output at present is 30 tons per week.

San Miguel County.

Bell Champion.—This claim at Saw Pit has been leased to L. H. Doniphant.

Liberty Bell Company.—This Telluride company has decided to suspend work on its electric power plant until next spring and to push the work on the 40-stamp addition to the mill. The order for the stamps has been placed with the E. P. Allis Company of Milwaukee, Wis., and experiments on concentration and the use of cyanide for the tailings are in progress.

Ophir Shipments.—Shipments from Ophir District have averaged 15 cars per week for the past two weeks and it is believed that this record will be exceeded during the remainder of the season.

St. Louis Gold Recovery Company.—This company is pushing work on the Gold Run placers east of Telluride and will soon have its buildings completed and the machinery installed. The present plan is to sink to bed rock and raise the gravel by a hydraulic elevator.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Elkton Consolidated Mining and Milling Company.—This company has closed a deal by which the Thompson property passes into its hands. The price given is 125,000 shares of treasury stock. The Thompson adjoins the Elkton property on the south and has been quite a producer of ore during the past year and a half. At the market price of the stock the price paid for the claim was over $150,000. This purchase adds considerable to the property of the Elkton Company, which now owns the following property: Elkton, Kentucky Bill, Walter, Katherine, Appie Ellen and Thompson. The last three properties have been acquired within the past year and a half.

Free Coinage Gold Mining Company.—Suit has been brought by this company against the Orphan Bell Company for $20,000, for ore which, it is claimed, was taken out of the Free Coinage ground by the Orphan Bell people. The plaintiffs claim that the ore was extracted between March, 1897, and March, 1898, and that the plaintiffs have repeatedly asked the defendants for a settlement.

Isabella Gold Mining Company.—It is currently reported on good authority that this company has acquired control of the stock of the Orphan Gold Mining Company. This latter company owns part of the property originally owned by the old Orphan Bell Company. This consists of the Orphan and Orphan No. 1, the Ida Bell and the Ida Bell No. 1. The property lies close to that of the Isabella. Very favorable reports are being circulated about the increased richness of the ore in the tenth level of Isabella.

Portland Gold Mining Company.—A contract has been let by the management of this mine for a new working shaft on the Colorado City claim. The new shaft is to be at once put down 600 ft. The daily output of the Portland Mine is reported to be about 150 tons of ore per day.

GEORGIA.

White County.

Martin-Yonah.—The consolidation of the Martin and the Yonah properties, says the Dahlonega "Signal," will include the Reynolds, Hamby, Russell, Powell, Parks, Frazier, Oliver, Nichols, Richardson, Conley, Eatonton, Mercer, Butt, Lumsden and other mines. The total acreage is about 20,000. The Nacoochee Canal, constructed at an original cost of $50,000, is one of the leading features of the consolidation, its elevation and general position enabling the owners to work efficiently and economically the greater part of the property included in the consolidation. At the outlet of the main canal there is a fall of over 300 ft. to the level of Duke's Creek or Nacoochee River. With the exception of perhaps one lot the mines are continuous, and form a block of land many miles in extent. Mining on a very extensive scale will be begun as soon as the necessary arrangements are made, the deal having just been completed within the last few days, and so far as we know this being the first public announcement.

IDAHO.

Boise County.

The mountains in the Upper Payette and Salmon River country are snow covered and prospecting is over for the year. The Thunder Mountain country is spoken of as a promising field for exploration.

Bannock Dredge Company.—This company is still prospecting the bed of the Payette River above the Wetzell bridge. The gravel varies in depth from 12 to 30 ft. Six holes have been sunk. Two more will be put down near the bridge. A dredge will be put up next year.

Buffalo.—Superintendent John Kinkaid, of this claim, on the divide between Idaho City and Henry Creek, has purchased 2 batteries—10 stamps—of the Boulder Mill on Elk Creek.

Illinois.—The shaft is down 25 ft. Work stopped until the gallows frame is completed. The hoisting machinery and pumps are in place.

Mountain Queen.—This tunnel, above Pioneerville, is now in over 700 ft. and will cut the ledge before December 1st.

Twin Sisters.—This company at Centerville is running a tunnel from the Golden Fleece to the Golden Star Mine. The distance between the veins on the surface is 600 ft., but at the tunnel 250 ft. down, the distance will be about 400 ft. The tunnel is in 125 ft. On the 250-ft. level a drift has been driven 340 ft. on the Golden Fleece ledge, which is from 3 to 5 ft. wide.

Idaho County.

Buffalo Hump.—It is stated that Clark & Sweeney, of Spokane, Wash., nave taken a bond for $87,000 on a 7-16 interest in this claim, in Buffalo Hump District. No great amount of development has been done on the claim. A shaft is down 80 ft., with a crosscut at the bottom.

Shoshone County.

Rioters Convicted.—Ten of the 13 miners who had been on trial at Moscow on a charge of conspiracy and of stopping a United States mail train at Wallace on April 29th, when the Bunker Hill & Sullivan Mill was blown up, were convicted. Three men were discharged. The convicted men were: Dennis O'Rourke, Arthur Wallace, Henry Maroni, John Lucinetti, C. R. Burress, Ed Abinola, Francis Butler, P. F. O'Donnell, Mike Malvey, Louis Salla. They were sentenced by Judge Beatty to each serve 22 months in the United States prison at San Quentia, Cal., and pay a fine of $1,000, with the exception of Dennis O'Rourke, who, on account of his youth, gets off with 20 months and a fine of $1,000. Motions in arrest and suspension of judgment were previously overruled.

Helena-Frisco Company.—According to Spokane papers this company, operating on Canyon Creek near Gem, has taken in the property of the Galena Mining Company, the group owned by the Milwaukee Mining Company, and the Black Bear claim, and a company has been floated in New York with a capitalization of $2,500,000 and with its headquarters in that city. The Galena Mining Company owned the Gem Fraction, a small piece of ground lying between the Helena-Frisco group and the group owned by the Milwaukee Mining Company, which fraction has been proved to carry the leads of the Helena-Frisco. The Milwaukee Mining Company owned the Gem of the Mountain and Josie claims, extensions of the Helena & Frisco veins, and have been well developed, although not steadily worked. The Black Bear was owned by Larson & Greenough of the Morning Mine. It adjoins the Helena & Frisco group. Larson & Greenough were large holders in the old Helena-Frisco corporation. The Helena-Frisco has been controlled by Helena capital. The Galena Mining Company and the Milwaukee Mining Company were under the control of Finch & Campbell of Spokane. The deal is said to be handled by the Holters of Helena, who were prominent in Helena-Frisco affairs. The Helena-Frisco company has paid $550,000 in dividends. The mine employs 225 men and is developed to the 2,000 ft. level. The Milwaukee is developed to a depth of 700 ft. The Galena Mining Company's fraction has not been developed to any depth worth mentioning. The Black Bear has been developed to a depth of 600 ft., but little if any stoping has been done.

INDIANA.

The gradual decrease of pressure in the gas fields of the State shows that the supply of natural gas, which was so criminally wasted by townsite projectors and other real estate boomers, is fast falling away. Recently the Fort Wayne Gas Company, controlled by the Dietrich syndicate, notified all its consumers that it could not furnish a sufficient amount of natural gas for fuel purposes during the coming winter. All consumers were advised to lay in coal and wood to be used if necessary, and all factories, office buildings and hotels using gas under their boilers had their supply cut off on November 10th to protect private consumers and homes.

MICHIGAN.

Copper.

Arnold.—At this Kewenaw County mine the main shaft is down 1,130 ft. on the Ashbed lode and drifting goes on rapidly enough to keep one head of stamps running at the mill. The third level is opened up 320 ft. east and 400 ft. west. The fourth level is opened 250 ft. east and 220 ft. west; the fifth is opened 265 ft. east and 350 ft. west; the sixth is opened 335 ft. east and 295 ft. west; the seventh is opened 210 ft. east and 175 ft. west; the eighth, 200 ft. east and 130 ft. west; the ninth, 40 ft. east and 60 ft. west, and at the tenth level a station is being cut. From the third to the seventh levels, inclusive, stoping is being done. Drifting is under way at the third, seventh, eighth and ninth levels. The slope is not steep enough for the rock to fall to the bottom of the level after it has been stoped, so it has to be shoveled, increasing labor costs. The trap is so hard that no timbering is required. The shafts contain no timbers excepting those on which the skipways are built.

Mass Consolidated.—Shaft B is down 135 ft. No work is being done in the old workings above the 4th level. The branch of the Duluth South Shore & Atlantic Railway crosses the property. A 12-drill compressor is in use for drilling and another will soon be installed.

Quincy.—The output of copper for October was 741¾ tons, a falling off of 52¼ tons from September.

St. Mary's Canal and Mineral Land Company.—A warranty deed has been filed at Houghton conveying 240 acres mineral lands in T. 54, R. 34, adjoining the Tri-Mountain Mine, to the Champion Copper Company. It is reported that the new company is a New York concern with some prominent Boston copper men, among whom is Wm. A. Paine.

Iron—Marquette Range.

Cleveland Cliffs.—The Lake shaft workings have been troubled recently by mud from the old Lake Angeline bottom caving in owing to heavy rains.

Loraine.—Corrigan McKinney & Company are reported to have opened a paying body of ore on this Cascade Range property back of Negaunee.

Iron—Menominee Range.

Ballow Mining Company.—This company owns the Hiawatha prospect near Iron River. A branch track has been laid to the shaft.

Deerhunt.—Menominee men, headed by S. M. Stephenson, have bought and will equip this property east of Sagola.

Dover.—The old shaft at this Iron River mine is once more turning out ore. Two shifts of miners are busy.

Lee Peck.—This property has been taken over by Corrigan, McKinney & Company, and the shaft is being pumped out. A hoist and boiler from the Lincoln are used. The prospect is 2 miles from a railroad and the only shipment ever made was 2,000 tons in 1892. There is said to be a good show of ore.

Michigan.—The Oliver Mining Company will sink a new shaft on this property at Amasa. Thoburn Gibson is in charge.

Oregon.—At this mine at Norway grading is completed for a large stockpile at No. 4 shaft. Preparations are under way for diamond drill work in the southwest corner of the property.

Ropes.—This gold and silver mine near Ishpeming was recently sold by B. W. Wright, the receiver, at public sale November 6th for $7,500 to W. H. Traverse, of Chicago, agent of the Rand Drill Company. The sale has still to be confirmed by the court. A sale some weeks ago for $2,500 was rejected by the court. The property in the 16 years it was worked is said to have produced over $650,000 worth of gold and silver, principally gold, but never paid. According to reports, the Rand Drill Company will dismantle the plant for the sake of the machinery, the equipment being very complete.

Voos Exploration.—This exploration east of Crystal Falls has been taken over by Oglebay, Norton & Company. A pit was sunk in the blue ore 22 ft.

MINNESOTA.

(From Our Special Correspondent.)

Freight rates have further dropped, and are now $1 to Lake Erie, from all upper lake ports.

Shipments from the docks of the Duluth & Iron Range and the Duluth, Missabie & Northern are possibly a little heavier than at any time this season, though they have practically ceased from the Eastern Minnesota docks. Much ore that was to have been carried over till next spring has been contracted for shipment this fall, if weather permits.

On the Mesabi range alone there are now 25 heavy steam shovels of one make, ranging in weight from 50 to 90 tons, employed in mining and stripping. Other makers are also well represented.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Fayal Iron Company.—This company has laid off one of its shovels and engines, leaving but 2 at work in the open pit. Shipments are decreasing.

Diamond Iron Company.—This company is working 18 men near Grand Rapids, but expects to work more. The water will soon be out of the shaft.

Penobscot.—This company is to install a new pumping plant, consisting of a Wickes vertical water tube boiler, 750 H. P., two Prescott cross compound, condensing, fly wheel pumping engines with a capacity for from 4,000 to 5,000 gals. a minute. It is expected the machinery will handle water at about ½ the present cost. The Penobscot consumes more coal than any mine in Minnesota because of its heavy water. About 82,000 tons of ore have been shipped so far, and the mine is still sending out ore. Ore will be stocked all winter. The company has just been incorporated, with $500,000 capital, and as incorporators, John F., Selwyn, Chas. A., N. A., and Chas. F. Eddy, all of Bay City.

Roberts.—This mine will complete shipments about November 15th, with a total of about 75,000 tons. It will work all winter.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The ore market has felt the effects of the weak spelter market and zinc full 63%, being $35. About 12 cars brought this fell 63%, being $35. About 12 cars brought this price, including a portion of the output from Joplin, Oronogo, Belleville and Stotts City, but the bulk of the sales were at $34 and under per ton. Many of the larger operators refused to sell, believing that the present condition of the ore and metal markets is only temporary. Lead opened the week at $27 per 1,000 lbs., but dropped to $26.50 and closed at this figure, with a weaker demand.

During the corresponding week last year, zinc ore sold at this week's prices, $35 per ton, but lead brought $21 per 1,000. The turn-in of lead was less this week by 37,490 lbs., but the zinc sales were greater by 1,503,310 lbs., and the value was greater by $13,249. For the corresponding 45 weeks of 1898, the lead sales were greater than this year by 5,139,892 lbs., but the zinc sales were less by 51,679,930 lbs., and the value was less by $3,722,073.

As compared with the previous week, the zinc sales were greater by 964,140 lbs., but the lead sales were less by 52,780 lbs., and the value was less by $855. Following is the turn-in by camps for the week ending November 11th:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	1,548,580	323,600	$38,491
Carterville	1,097,370	186 850	17,022
Webb City	358,510	63,260	5,620
Belleville	400,070	5,990	7,159
Central City	160,720	12,450	2,901
South Jackson	173,290	40,700	4,061
Duenweg	298,320	70,150	5,588
Cave Springs	138,120	11,910	2,545
Granby	370,000	7,000	5,800
Aurora	1,144,000	14,140	14,346
Carthage—Reeds	133,190	....	1,632
Hells Neck	....	7,450	154
Lehigh	83,680	....	1,452
Dade County	85,000	....	580
Galena-Empire	2,520,000	257,000	43,660
Barry County	43,260	....	272
Morgan County	36,840	....	645
Oronogo	223,260	....	3,535
Stotts City	138,850	32,210	3,225
Total for week	8,953,070	1,032,050	$158,688
Total 45 weeks	439,681,770	41,358,578	$9,581,153

Mining Land Sales.—W. W. Wampler of Webb City has sold his 54 acre tract southwest of the Lehigh mines and adjoining the Holden Brothers tract, to Frank Jay Mackay of Chicago, for $20,000. There is a paying mine on the land and Mr. Mackay will start a steam drill prospecting. P. H. Leddy of Joplin has sold his ¼ interest in a lease on a part of the Montgomery land on Turkey Creek to C. R. O'Donnell of Boston, for $2,500. The Bingo lease of 160 acres of the O'Keefe land southwest of Joplin has been sold to eastern parties for $75,000. Seven new producing properties have beeen developed on this ground in the past few months, and the new purchasers have already contracted for a $10,000 mill on which work will commence at once. Members of the Colonial Lead and Zinc Company, represented by Frederick J. Hart and J. H. Dangerfield, have purchased through E. Hedburg the 160 acres of land on Spring River, just across the Kansas line, on which the great mines of Meredith Brothers are located. The consideration was $50,000. The T. C. Molloy Mine and 4 lots on the Missouri Lead and Zinc Company's ground have been sold to James R. and William Mears and Edwin G. Peters of Scranton, Pa., and D. M. Sayers of Joplin, but the price was not made public. The Bingo Mining Company has purchased the Van Bibber Mine near the Bingo Mill for $6,000. A big face of ore has been developed with a horse whim, and the Bingo Company will build a tramway to its mill. Hugh McIndoe and W. A. Hacker have sold their ½ interest in the 77 acre lease of the Helen Prospecting Company on the land of the West Joplin Lead and Zinc Company, to W. W. Gregg and associates for $4,000.

Some of the mines in the district are being forced to shut down for lack of coal, and others are shutting down because they cannot afford to produce ore at present prices. Those who are

shutting down for this reason are small operators who have rented mines at 16 2/3% from the sub-lessees and in addition to their rent have to pay the 20% royalty of the sub-lessee, which was possible while ore was above $40 but impossible under present conditions. There seems little probability of ore going below $30 per ton, and there is a good profit in it at that figure to the legitimate miner or the investor who has secured good properties at a reasonable price; but tailing mills and watered properties will shut down by scores if the price touches $30 with the present high charges for operating.

MONTANA.

Carbon County.

Rocky Fork Coal Company.—This company's plant at Red Lodge is being improved. New steel tipples and a power house are to be put in that will allow the capacity of the mine to be increased to 2,500 to 3,000 tons per day. A crew of 100 Japanese laborers are extending the mine's yard limits.

Flathead County.

Snowshoe.—This group near Libby includes 9 claims covering 13,500 ft. of the Snowshoe lode. Since the property was opened in 1895 the ore shipped is said to have averaged about 55% lead, 22 oz. silver and $4 in gold. The present haul by wagon road to the railway is 20 miles. An improved water system to keep the 125 ton concentrators supplied the whole year is planned, and also a much larger mill. H. C. Walter has general charge, while C. F. Raht is employed at the mill. From 60 to 100 men have been employed during the past summer. The property is about to be transferred to the Pacific-Northwest Mining Corporation, Limited, of London, England.

Jefferson County.

Katie.—The new concentrator at Basin has had a trial run and is ready to begin work on ore from the Katie mine. The smelter is also ready.

Pole Creek Placer.—The Toronto company that recently purchased this placer of A. W. Turner of Red Bluff is building ditches and flumes and will continue operations all through the winter when weather permits.

Madison County.

Madisonian.—Machinery for the mill is being hauled from the station at Norris. The mill will probably be running soon. It will be one of the most complete cyanide plants in the State, with a capacity of about 75 tons per day. The process is dry crushing with rolls, cyaniding and concentrating.

(From Our Special Correspondent.)

Butte & Ruby Valley Company.—The new smelter started on November 9th with an experimental run. The plant has a capacity of 125 tons per day and employs 50 men. It will help develop the mines of this county, which had to ship all smelting ore to Butte and Helena. The mines are principally gold and yield in some cases free milling ore, but much of the ore is sulphide.

Copper Cliff District.—Fifty men are working on claims. As soon as sufficient snow falls to make the roads passable shipments of the ore on the dumps will begin. The ore has to be hauled 15 miles to the Northern Pacific Railroad.

Western Montana Placer Company.—C. S. Crysler has purchased the interests of the other stockholders and will develop the property on a large scale. The claims are on the tributaries to Lolo Creek.

Ravalli County.

(From Our Special Correspondent.)

The Anaconda Copper Mining Company will build an extension of the railroad from Grantsdale up the Bitter Root Valley during the winter by which logs will be brought to the Hamilton mills instead of by water. This branch will have a stimulating effect on claims in the Mineral Hill district.

Silver Bow County.

Homestake.—This mine in Horse Canyon near Butte is owned by C. Sullivan, who opened it up 300 or 400 ft. deep, but stopped some years ago on account of water. F. Aug. Heinze recently took a bond on the property and now is having it cleaned up. New boilers and machinery are to be put in.

NEW MEXICO.

North American Turquoise Syndicate.—This concern, promoted by A. MacGregor Leffingwell, of New Haven, Conn., for the purpose of consolidating a number of New Mexico turquoise mines, has been incorporated under the laws of New Jersey, with a capital of $1,000,000. The principal office is in Jersey City, N. J. A. MacGregor Leffingwell, Douglas Leffingwell and Thomas J. Madden are named as incorporators.

Colfax County.

Challenge.—This claim at Elizabethtown is reported bonded to a Kansas City company for $15,000 for 18 months.

Taos County.

Burnt Mountain Copper Company.—This company, which proposes to develop a group of claims 12 miles west of Tres Piedras, has elected the following officers: President, Hammon Pollard; vice-president, E. S. Resor; secretary, S. L. Roland; treasurer, H. L. York; general manager, A. E. York. The head office is at Pueblo, Colo.

NEW YORK.

Putnam County.

Croton Magnetic Ore Company.—The W. J. Carlin Company, of Pittsburg, has purchased the magnetic iron ore separating plant formerly operated by this company at Brewster, which ran about 4 years, but for some time has been shut down. The company had a capital of $325,000, which was spent in attempting to utilize ore which finally became too high in phosphorus. It was mined from the rock, and first put through 2 large crushers, then through 2 others, which further reduced it, and finally a Sturtevant cone mill pulverized the ore so that the iron could be separated by magnetic attraction. The cost of getting the ore from the rock was too great, and the ore carried too many impurities. The plant will be dismantled at once.

OREGON.

Baker County.

There are at present 161 stamps dropping in the region tributary to Sumpter. In September, 1898, there were 108. Mills now going up will increase the total in a few months to 261.

Red Boy.—This mine and mill, 18 miles west of Sumpter, continues to turn out over $15,000 of gold per month.

Bonanza.—This mine, 16 miles southwest of Sumpter, closed down temporarily on account of trouble with the miners, but is running again. It employs 100 men and supplies a 40-stamp mill with ore.

Golconda.—This mine, 7 miles from Sumpter, owned by J. T. and J. J. English, has some very rich rock. A No. 4 Bryan mill does the crushing and 85% is saved on the plates. The ore occurs in slate, not far from a granite contact. The bromide-chlorine plant, of which great things were expected, has proven practically worthless in treating ore of high value. The Golconda has a double-compartment shaft, with a steam hoist 360 ft. deep.

Ibex.—This group of 3 claims 7 miles from Sumpter has been under option to London, Eng., parties. Arthur Hill is the owner. The shaft is down 300 ft., showing a wide ledge with a 6-ft. pay shoot said to run $15 to $20 gold per ton. About 25 men are busy.

PENNSYLVANIA.

Anthracite Coal.

Delaware Valley & Kingston Railroad.—The Pennsylvania Coal Company is stated to be behind this project. The Pennsylvania has had a traffic arrangement with the Erie by which it sent its coal to the Hudson River at Newburg and also to points north, but now proposes to have its own road from near Lackawanna, Pa., to Kingston, N. Y. The capital is $2,500,000 and among the directors are Samuel D. Coykendall, of Kingston; Edward L. Fuller, of Scranton; Walter Ferguson, of Stamford, Conn., and Samuel Thorne, Frederic P. Olcott, John W. Sterling and George W. Williams, of New York. The company will run its tracks along the abandoned Delaware & Hudson Canal, making the cost of construction low, it is said under $35,000 per mile. The Pennsylvania Coal Company owns the Erie & Wyoming Valley road, which under the traffic arrangement with the Erie has been operated by that company. One of the branches of this road runs to Lackawaxen. The Delaware Valley & Kingston Railroad Company, it is stated, will first construct its 81-mile line to Kingston; the Pennsylvania Coal Company will then extend its line from Lackawaxen to join the new road, forming a complete independent line to tidewater.

Jermyn.—The 3 mines at Jermyn are closed, owing to a strike over alleged excessive dockage. There has been some violence and threats of further trouble have been made by the miners.

Lehigh Valley Company.—This company it is announced, will erect an immense breaker 1 mile southwest of Hazleton, which will be even larger than the big No. 40 breaker just completed. The new breaker will give employment to more than 1,000 hands.

Slate.

(From Our Special Correspondent.)

Albion.—William Harding & Company and William Lobb & Sons will work this Pen Argyl quarry for the next year. They will place the slate on the bank at a certain price, and the Albion Slate Company will market the slate through R. S. Brown, of Easton, as agent. The owners are clearing the rubbish which fell in July 4th.

American-Bangor Slate Company.—At the recent annual meeting the board of directors was increased from 7 to 9 members. The quarry is valued at $250,000, and is considered the best on the Bangor vein. The directors are Gen. Frank Reeder and Charles S. Colbert, of Easton, Pa.; Cotton Amy and C. S. Ford, of East Bangor, Pa.; J. E. Long, of Bangor; Conrad Miller, of Nazareth; M. Pfaelzer, W. J. Turner, president of the Lehigh & New England Railroad, and R. H. Rushton, of Philadelphia. Messrs. Pfaelzer, Turner and Rushton are the new directors. The officers are: President, Gen. Frank Reeder; vice-president, Conrad Miller; secretary and treasurer, J. E. Long; general manager, Cotton Amy. A meeting of the stockholders is advertised for December 16th for the purpose of consenting to the sale or lease of the real estate and quarry properties owned by the company to a representative of the new controllers, W. J. Turner, et al.

Columbia Bangor.—This quarry broke Bangor Valley records in October. Working 13 blocks 23 days, 3,110 squares of roofing slate were produced. One block had 297 squares to its credit. Another bench of fine rock has been uncovered by removing 4,000 yds. of top.

Danielsville.—This old quarry has been leased by W. J. Turner, president of the Lehigh & New England Railroad, and others, in the interest of that road. They took charge November 1st. The quarries now leased or controlled by these interests are Star and Standard, East Bangor, Northampton, American Bangor, Old Delabole, Bangor Southern, all on the Bangor vein; the Aetna and extensive undeveloped tracts at Pen Argyl.

Pen Argyl Blackboard Company.—Parsons Brothers have leased the West Albion blackboard factory to run in connection with the Golden Rule quarry.

Pen Argyl Valley.—A new 50 H.P. engine and the fourth rope has been added to this quarry's equipment.

TENNESSEE.

Lawrence County.

Pinkney Mining Company.—This company, capitalized at $50,000, has been organized to work the iron ore property owned by the Lawrence Iron Company, of which Henry McCormick of Harrisburg, Pa., is the principal owner. This property contains over 2,000,000 tons of brown ore at Pinkney, and the owners have organized the company to mine ore, paying the Lawrence Iron Company a royalty. The officers are: President, Vance C. McCormick; secretary and treasurer, Henry B. McCormick; general manager, Daniel King. Both companies will be under the control of Henry McCormick. A blast furnace is under consideration.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Republic Consolidated Gold Mining Company.—At a directors' meeting in Republic, November 3d, a majority of the directors were present, including President Patrick Clark, Vice-President C. J. McCuaig, A. A. Ayers and B. C. Kingsbury. It was decided to erect a new mill of 200 tons a day capacity, and to set the foundations before cold weather. The contract for the building will be let as soon as plans are finished. It is intended to do custom work. The ore will be roasted and then treated by plain cyaniding. It is expected the cost of treatment will be less than $3 per ton. The old mill will be used for some time testing for the new equipment.

Republic Reduction Company.—This company having made tests of ore from all the mines in Republic, has concluded to build a 75 ton mill to treat ore by a leaching process. The mill building will be 60 by 260 ft. and will be equipped with a 160 H.P. engine and boilers, Blake crushers and Cornish rolls for dry crushing, 3 or 4 preparing and 15 leaching tanks, and a dynamo and equipments for electric lighting. The machinery ordered from the Colorado Iron Works of Denver is on the way. Patents of E. A. Smith and M. H. Lyng are to be tried. The plant will probably be in operation by February 1st. M. B. Brownlee of Spokane, Wash., is president, F. E. Sargeant, New York, vice-president, J. F. Lansing, formerly business manager of the Trail Smelter at Trail, B. C., will be secretary and business manager, E. A. Smith superintendent and M. H. Lyng chemist.

Snohomish County.

Calumet Mining Company.—This company ordered recently a 2,300-ft. wire tram for the Calumet claim at Index. This tram will run from the mouth of the tunnel and will be a double wire gravity tram. The company already has one tram in operation, 700 ft. long.

WISCONSIN.

Iron—Gogebic Range.

Odanah.—Men are cleaning out the old shaft of this mine near Hurley, and it will probably be pumped out December 15th. The ore is non-Bessemer.

WYOMING.

Carbon County.

(From Our Special Correspondent.)

A short distance southwest of Battle the Hercules Mining Company, owner of the Hercules and other claims on the "contact," has erected

a shaft house and installed a large hoist and pump. Power is furnished by a large Foos gas engine, the first gas engine in the district.

Just south of town and on the same "contact" the Victor and other claims belonging to Messrs. Ledbetter, Bond and others have passed to a company with John Ledbetter as superintendent. This company has erected a large shaft house and installed a first-class steam hoist and pump.

At the Rudefeha, after shipping during the late autumn and winter some 600 or more tons of copper ore, from which the smelter returns were 30% with some gold, work was discontinued in the old shaft. Late in the spring a new 2-compartment shaft was started about 250 ft. down hill from the original shaft and south of the vein, to cut it on its dip at about 200 ft. in depth. A large shaft and machinery house was erected and a boiler, engine, steam hoist and pump were installed. Later another boiler and engine to run the Ingersoll-Sergeant compressors and Sullivan drills were added, which drills are now at work. Large boarding houses, lodging houses, offices and stables have been erected. A gravity flow of water is brought to the buildings through pipes. After sinking about 150 ft. a crosscut was run toward the vein, which at about 35 ft. cut the hanging wall. The vein as far as drifted on averages about 22 ft. thick, all mineralized with copper. Drifting along this vein toward the old shaft is going on while the new shaft is being sunk to the 300 ft. level. Most of the vein matter is thought to average from 10 to 15% copper, while a considerable percentage of the ore is similar to that shipped from the old shaft.

During the minter of 1889-90 the Ferris-Haggerty Mining Company was incorporated with a capital stock of $1,000,000. It owns the Rudefeha and an extension at each end of the same. Later, it is said, the owners were offered and refused 90c. on $1 of the par value of their stock. A little later the owners gave an option for 10 days at the par value, but this option was not taken up. J. M. Rumsey, one of the original owners, sold his ¼ interest at an early date for $1,000. Robert Deal received about $30,000 cash for his ¼ interest. Ed Haggerty has realized about $45,000 cash for his ¼ interest, and is reported to hold a small amount yet. A controlling interest is held by Geo. Ferris, one of the original locators. At present the mine promises to be a great producer. The management recently finished a new road direct from the mine to Saratoga via North Spring Creek and the old Mowry sawmill site, a distance of 25 miles. Over this road the ore and supplies will be hauled instead of along the crest of the range for 7 miles to Battle, as heretofore.

FOREIGN MINING NEWS.

AUTRALASIA.

Victoria.

The Mines Department reports the production of gold in the Colony for August and the eight months ending August 31st as follows, in crude ounces:

	1898.	1899.
August	82,099	81,875
Eight months	529,238	547,663

For August there was a decrease of 224 oz.; for the eight months there was an increase of 18,425 oz., or 3.5%, this year.

Western Australia.

Gold production for October was 205,186 crude oz., the largest quantity ever reported in one month. For the 10 months ending October 31st the output was 1,365,387 crude oz. gold. At the values reported this was equivalent to 1,221,605 fine oz. gold, or $25,250,581.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Rossland Ore Shipments.—The shipments for the 10 months and 8 days ending November 8th amounted to 150,000 tons nearly, valued at $2,500,000.

Center Star.—The daily shipment amounts to about 150 tons.

Le Roi.—The ore shipments amount to about 350 tons daily.

Noble Five.—This Slocan mine is to be reorganized, under provincial law, by it is said, the Dunsmuirs, who own a controlling interest.

Slocan Labor Troubles.—The Silver Lead Miners' Association has started to import Italian laborers, and trouble is threatened. The striking miners steadily refuse to work 8 hours for $3, but demand $3.50, the price formerly paid for a 10-hour day.

British Columbia—Nelson.

Hall Mines, Limited.—This company's statement for 4 weeks ending October 27th says the copper smelter ran 13 days 19 hours, treating 2,919 tons of Silver King ore. The product was 64 tons of copper and 33,930 oz. silver, the average return being 2.19% copper and 11.62 oz. silver to the ton. The lead furnaces ran 20 days 22 hours, treating 649 tons ore, of which 192 tons were Silver King ore and 457 tons purchased ore. The product was 149 tons lead bullion, containing 145 tons lead, 15,770 oz. silver and 682 oz. gold. The averages were 22.34% lead, 24.30 oz. silver and 1.05 oz. gold to the ton. The Silver King ore smelted contained 2,640 oz. silver, or 13.75 oz. to the ton.

British Columbia—Yale District.

(From Our Special Correspondent.)

Laurier.—A shaft is being sunk in dark, graphitic shales, and the owner expects to get a bed of coal, which is unlikely.

Loyal Canadian.—There are 5 claims in this group, adjoining the Seattle, but little development work has been done.

Ottawa.—This claim gives $18 assays at the end of a 14-ft. tunnel.

Phoenix Camp.—This camp is very excited. The Old Ironsides-Knob Hill and the Brooklyn-Stemwinder groups are the 2 most important. In the first are the Old Ironsides, Knob Hill, Victoria, Aetna, Fourth of July, and Phoenix, practically under one management, with Jay P. Graves of Spokane as manager. Though the ore bodies are very large, the values are so low that only scientific treatment and economy in working can make mining profitable. A large body of ore is shown in the Old Ironsides and Knob Hill, sustaining surface indications which showed vein matter, not all pay ore, 200 ft. wide. No. 1 shaft of the Old Ironsides is down about 250 ft. A little work was done at the 100 ft. but most at the 200-ft level; the drifts and crosscuts aggregating more than 1,000 ft. No. 2 shaft, 350 ft., has been sunk 350 ft. on the dividing line of the Old Ironsides and Victoria. At the 200-ft. level the shafts have been connected by a 317-ft. crosscut, which has been continued 350 ft. east into the Victoria ground, cutting a second ledge. At the 300 ft. a crosscut runs west from No. 2 shaft into the Old Ironsides for 200 ft., and 60 ft. east into the Victoria. At the 200 ft. and 300 ft. level the faces are in ore.

On the Knob Hill a drift has gone diagonally across the ledge 650 ft. to the east line, and then swung to the south. After running 150 ft. further it struck the foot wall. A body of ore has been blocked out which is 200 ft. on each face and 140 ft. deep. A large percentage is shipping grade, and as soon as the Eholt spur is completed the group will be ready to ship to the smelter near Columbia.

Ontario—Port Arthur District.

(From Our Special Correspondent.)

It is stated that discoveries of conglomerate rock showing copper have been made on the shores of Black Bay, east of Port Arthur, and that the land has been taken by a large eastern company. The rock is said, on doubtful authority, to run as high as 4% copper.

Ontario—Rainy Lake District.

(From Our Special Correspondent.)

Decca Mining Company.—This company has a shaft down 220 ft. and drifts and crosscuts are being run to open the vein.

Golden Star Mining Company.—The shaft is now sinking at 440 ft. and the vein shows a rich pay streak and is 4 or 5 ft. wide. The 10-stamp mill is showing results of from $300 to $450 a day off the plates alone. Ten additional stamps are on their way. Miners are making about $4 a day, and the force numbers about 40 men.

Rainy River Exporation Company.—This company has bought for £7,500 and a stock interest 2,000 acres near Sturgeon Lake and 1,000 acres near Saw Bill. Work begins at once on the Mayflower and Hidden Treasure at Sturgeon Falls.

(From Our Special Correspondent.)

The utmost efforts are being made to get in supplies and men for the new railway and the mines before the close of navigation. There are 1,200 men working on the road, and exploration is active. The region is known to contain much iron, but much of it is low grade magnetite, and hematite locations are few.

Mikado Gold Mining Company.—This company's clean-up for October was 1,000 oz., valued at about $17,000, the best month's run in its history. A part of the mill did not run all the month.

MEXICO.

Chihuahua.

Chihuahua Mining Company.—The company is reported to be shipping from its mines near Chihuahua from 150 to 200 tons per day. The Santo Domingo Mine is down 1,400 ft. and is reported to show in one place an ore body 200 ft. wide.

Dolores.—This mine, near Chihuahua, belongs to the Consolidated Kansas City Smelting and Refining Company. It is shipping 40 to 50 tons daily. The output is to increase, as a branch railroad is about completed to the mine.

San Juan.—This mine is owned by Pedro R. Prieto of Chihuahua. Much of the ore is very high grade and some is said to run 1,000 oz. to the ton in silver. The mine is worked in a crude and primitive manner.

Durango.

American Mining Company.—The new mill at El Oro is reported running satisfactorily and the mine is said to look well. Mr. Foster is general manager.

COAL TRADE REVIEW.

New York. Nov. 17.

Anthracite.

While it is altogether too early to talk of a general scarcity of anthracite or anything resembling a hard coal famine, yet it is evident that coal is going to be hard to get. Car supply is bound to restrict the amount the collieries can send forward, and colder weather is bound to increase buying. The actual production of last month was 4,897,624 tons, about 750,000 tons ahead of October, 1898, while shipments to October 1st are 5,700,000 ahead of last year's output to the same date.

Coal continues to accumulate slowly at upper lake ports, and Chicago territory will have to rely on all rail shipments this winter. Buying in the East is generally active and the collieries are working pretty near full time.

The new road projected by the Pennsylvania Coal Company will probably be built. The Pennsylvania's output is somewhere around 1,600,000 tons annually and its mines extend from Pittston to Dunmore. So long as another road is to be built it is fortunate that the interests behind it are of weight. The road is likely to be quite a different factor in the trade from the projected New York, Wyoming & Western, that died so prematurely.

Prices of coal at New York are firm. It is thought that no action will be taken by the companies to advance present figures, but that the public will readily pay more before long to get coal promptly. It need surprise no one to see free burning white ash stove coal selling for $4.50 alongside or over before spring.

Bituminous.

The condition of affairs in the seaboard soft coal trade shows no improvement; in fact, if anything, it's worse. Producers find it impossible to catch up with the orders pouring in from contractors. There is no doubt that many contractors, who could wait, don't want to and refuse to be satisfied with the amounts sent them. Ocean freights are not considered at all. These are approaching figures almost prohibitive. There is a rumor that no less a figure than $3.50 has been asked from Baltimore to Bangor. Firms with delivered contracts are getting badly squeezed. It is currently reported that one prominent concern that tried to scoop things last winter is going back on its contracts and a large crop of lawsuits is to follow.

The demand for coal comes from all points. To get vessels contractors do not hesitate to pay any demurrage and the scarcity of both boats and vessels is pronounced.

The present condition of things will undoubtedly have one effect next year: We shall see no "season's supply" contracts. Amounts will be specified and delivered. Business will not be sought for.

While the actual increase of freight rates from mines to tide for next year has not been announced, yet one prominent line is reported to have informed its shippers that they must expect an advance of 45c.

Transportation from mines to tide is slow. Car supply is a trifle better than it was last week. In the coastwise vessel market captains are naming their rates and are getting them. The current rates from Philadelphia to Boston are between $1.95@$2.15.

Birmingham, Ala. Nov. 13.

(From Our Special Correspondent.)

There is no change to be noted in the coal market in the Birmingham District or throughout the State of Alabama. The mines are working at full blast, except at Galloway, in Walker County, where some minor labor troubles prevail. The output in this State is larger than it has been in months, and prospects are bright for a continuation for some time to come. The railroads are now able to furnish more cars and the miners have all the work they can take care of. Good wages are being made and very few idle miners are to be found in this State. Coal quotations are strong, with no indications of any break in the near future.

The formation of the Globe Coal Mining Company by Messrs. F. M. Jackson and T. T. Hillman, of this place, a couple of weeks since, may mean some extra heavy development. Mr. Jackson, when questioned on the matter, stated that the new company would soon be in business, but he had but little to say about the coal fields to be developed by his company. Mr. Jackson is general manager for the coal department of the Alabama Consolidated Iron and Coal Company. He is well acquainted in the coal operating business and is conversant with the coal-fields of this State. Mr. Hillman has been interested for years in the development of this district and connected with iron companies and other industries hereabouts.

Pittsburg. Nov. 15.

(From Our Special Correspondent.)

The railroad coal combination has issued a revised schedule of prices. No change is made

in the price of 1¼-in. coal, which remains at $1.15 a ton. The greatest increase since the combination was formed is for small coal and the new prices are as follows: 1-in. nut, 35c.; ¾-in. nut, 75c.; slack, 55c. These are the highest rates that have ever ruled for nut coal and slack. Another advance in the price of lump, or 1¼-in. screened coal, is expected. The combination has also wiped out the differential in prices that has always prevailed between thick and thin vein coal. The former is of an inferior quality and is mined at a cheaper rate, but the price is now the same as for thin vein coal. The retail detailers have filed a protest on the ground that they receive 1c. a bu. less for this grade of coal from the consumer. The miners are taking a deep interest in the increases in price and are anxious to secure a higher rate for mining. They are working under an annual agreement that does not expire until March 31, 1900. The leaders of the miners have issued a call for a convention to consider the wage question. It will be held on Thursday, November 23d. There are fully 25,000 miners in the Pittsburg District and it is believed that nearly every section will be represented at the convention.

Connellsville Coke.—The coke trade was more favorable last week than the week previous, both the shipments and production showing a gain. Notwithstanding the increased shipments the stocks at the furnaces are unusually low for this season of the year. Contracts are being made for coke extending through the first half of next year, and it is said that the price asked is $2.75 for furnace, $3 for foundry coke. Efforts are being made to get all the ovens in the region in operation. The estimated production for the week was 193,062 tons, an increase of nearly 1,000 tons. The shipments aggregated 10,481 cars distributed as follows: To Pittsburg and river tipples, 3,409 cars; to points west of Pittsburg, 5,200 cars; to points east of Connellsville, 1,872 cars. This is an increase of 182 cars as compared with the shipments of the previous week.

SLATE TRADE REVIEW.

New York. Nov. 17.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries in carload lots is given below:

Prices of Roofing Slate.

Size, inches	Monson or Br'n ville.	Bangor	Bangor Ribbon.	Alb'n. or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Gr'n.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.50	3.00	3.35	3 25	5.10	3.00		....
24 x 12	6.60	3.50	3.00	3.35	3 25	5.25	3.00	3.75	.....
22 x 12	6 60	3.50	3.25	3.50		5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3 50	3 35	5.25	3.00	4.00	....
20 x 12	6 90	3.75	.....	3 50	3 35	5.25	3.00	3.75	.....
20 x 11	6.80	.....	....	4 00	3.35	5.25	3.00	.....	.....
20 x 10	6 80	4 50	3.50	4.00	3.60	5.35	3.25	4.25	9@10
18 x 12	6.80	3 75	....	3.50	....	5 25	3.00	3.50	.....
18 x 11	7.00	.....	....	.....	....	....	3.00	3.75	.....
18 x 10	7.20	4.50	3.50	4 00	3.60	5.35	3 25	4.00	9@10
18 x 9	7.10	4.50	3.50	4 00	3 60	5 35	3 00	4 25	9@10
16 x 12	6.80	3 75	....	3.50	....	....	2.85	3.50	.....
16 x 10	7.10	4 25	3.50	4 00	3.60	5 25	2.85	4.00	9@10
16 x 9	7.00	4.25	.....	4.00	3.60	5.35	2.85	4.25	9@10
16 x 8	7 20	4 50	3.50	4.00	3.60	5.35	2.85	4 25	9@10
14 x 10	6 60	3.75	3.25	3.35	....	5 25	2.75	3.75	9@10
14 x 9	6.50	.....	.....	.....	....	....	2.75	3 75	9@10
14 x 8	6 60	3.75	3.25	3.35	3.25	5.10	2.75	4.25	9@10
14 x 7	6.40	3.75	3 25	3 35	3.25	5.10	2.50	4.25	9@10
12 x 10	5.80	....	....	....	.....	....	2.50	3.25	.....
12 x 9	5.60	.....	.....	.....	.....	.....	2.50	3 25	.....
12 x 8	5.50	3.50	.....	3.35	3.25	4 85	2.50	3.50	8¼@8¾
12 x 7	5.00	3.25	....	3.35	3.25	4.85	2.50	3.50	8¼@8¾
12 x 6	4.80	3 25	.....	3 35	.....	4.75	.....	3 50	8¼@8¾

A square of slate is 100 sq. ft as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3/16 in. Intermediate sea green, $2.25@$2.45 per square, according to size.

This should be a good month for slate, considering last year's sales, but we fear business will show a falling off, owing to a stoppage in many building operations. On the other hand, prices are much better than a year ago, which is certainly encouraging.

The shipments from Slatington and Walnutport, Pa., during the week ending November 9th were 5,152 squares roofing, 344 cases school slates, and 473 crates blackboards. The total shipments this year will show quite an increase in roofing slate. School slates and blackboards are moving in a good way, but in order to equal last year, some heavy shipments will still have to be made.

In export circles discussion prevails as to how cheaply roofing slate can be shipped. We understand certain quarrymen have cut prices as much as 80c. per square on export sizes, while others are striving hard to fill their orders at the old schedule. It is argued that these people are desirous of holding their foreign customers, in anticipation of a prosperous business next year. The freight market is also weighing heavily on the minds of exporters, owing to the enhanced rates. Last year freight room was obtainable to London at 15s., while to-day 20s. is reported, with a proportionate advance in rates to other ports. The exports of roofing slate so far this year show quite a falling off, and at the present rate the movement from New York alone will be fully 50,000 squares less than 1898.

CHEMICALS AND MINERALS

(For further prices of chemicals, minerals and rare elements, see page 630.)

New York. Nov. 17.

Heavy Chemicals.—Though the agents of the United Alkali Company have not yet announced next year's price of prime bleaching powder, we understand it to be about $1.75 per 100 lbs. On spot, up to $2.50 is asked, while sales from dock were recently reported at $1.90, and to arrive is quoted $1.75@$1.87½. The agents of the company are all sold up for this year's delivery. Domestic caustic soda has been advanced, and 1900 contracts are being booked on basis of quotations below; the foreign article is also firmer. Alkali shows a good trade, and sales of domestic are reported here up to $1.12½, owing to the scarcity of spot supplies. Sal soda of foreign make is higher, and transactions in domestic are pretty good at quotations. Chlorate of potash on next year's account is unsettled, as the domestic makers are said to be booking contingent contracts at very low figures—around 8c. per lb. Sales of foreign on spot were made at 9@9⅛c. per lb. for crystals and 9⅛@9¼c. for powdered, but to-day fractionally higher prices are asked. Bicarb. soda finds a ready market both for home consumption and export. Comparatively small imports of bleaching powder were made at this port this week. Receipts of domestic goods here were 592 drums, 250 bbls., and 450 sacks soda ash.

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, in bags.	80@85c.	87½@95c.	95@1.05
Caustic Soda, high test....	$1.85@1.95	$1.95@2.00	$1.95@2.00
98% powd....	.....	3 12½@ 3.50	.....
60@74 % pwd	.....	2.50@ 2.62½	.....
Sal Soda	60@70c.	.....	67½@73c½.
" conc.	1.30@1.75	.....	1.60@1.65
Bicarb. Soda..	1.25@1.37½	.....	2.25@2.37½
" " extra	3.25@3.50	.....	
Bleach. Pdr., Eng. prime..	.....	.....	2.10@2.15
other br'nds.	.....	.....	1.80@1.85
Chl. Pot cryst	.....	8.25@9.00	9.25@9.37½
" powd.	.....	9.12½@9.37½	9.50@9.62½

Prices are generally for large quantities, and in many cases depend upon make, test and package.

Acids.—Business is good, and 1900 contract prices for muriatic and sulphuric acids are higher.

Quotations are in large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No.8....	$1.62½@1.75	Nitric, 38°.....	$4.12½@4.37½
Blue Vitriol, best	5.25@5 50	Nitric, 40°.....	4.37½@ 4.75
Chamber, 50°, ton.	16.00@17.00	Nitric, 42°.....	4.75@ 5.00
Muriatic, 18°.	1.20@ 1.25	Oxalic	5.75@ 6.00
Muriatic, 20°.	1.35@ 1.40	Sulphuric, 66°....	1.20@ 1.25
Muriatic, 22°....	1.50@ 1.55	Sulphuric, 60°	1.05@1.10
Nitric, 36° ...	3.87½@4.12½	Sulphurous, 100% SO_2 anhydrous.	8.00@10.00

Brimstone.—No arrivals are noted at this port. Spot best unmixed seconds are quoted $21.50@$22 per ton, and shipments $20.75@$21. Thirds are about $2 less per ton. The shipments from Sicily to all countries in September are reported at 36,720 long tons, showing a decrease of 35,891 tons as compared with last year. Stocks in Sicily on October 1st were 247,130 long tons, being an increase of 42,837 tons over 1898.

Pyrites.—The fertilizer people are asking quotations on next year's contracts. Business at this time is quiet, and prices are unchanged.

We quote American pyrites as follows: Mineral City, Va., lump ores, $3.25 per long ton (basis 42%), and fines $3; Charlemont, Mass., lump, $5.50, and fines $4.75; Pilley's Island, lump, $6.50, and fines $4.50 per long ton, delivered in New York. Spanish pyrites, 12@14c. per unit, according to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46% to 51% of sulphur; American, 42% to 44%, and Pilley's Island, N. F., 50%.

Phosphates.—The foreign market is dull, and on domestic account buying is moderate. It appears that the miners are rushing with the orders in hand, but they are being troubled somewhat by high ocean freights. The shipments of rock from Fernandina in October amounted to 15,700 long tons, making a total of 226,487 tons for the ten months of this year, showing an increase of nearly 40,000 tons over last year. The November shipments are estimated at 15,000 tons. The movement from Savannah, Ga., in October was 12,724 tons, making a total of 77,182 tons for the ten months of this year. Charters recently taken were British steamers of 1,691 tons from Fernandina to Hamburg at 21s., option Rotterdam at 20s. 6d., November sailing; 1,082 tons from the same port to the United Kingdom or Continent at private terms; 1,804 tons from Tampa to Stettin at 20s., and 1,428 tons from Port Royal to Dublin or Birkenhead at 17s. Also, a Norwegian steamer of 1,209 tons from Tampa to St. Nazaire, France, at 21s., and a schooner of 159 tons from Connetable Island to New York at $4.

Latest quotations for the European market, c. i. f. United Kingdom or North Sea ports, are as follows: Florida high grade rock (77@80%), 8¾d. ($13.26 per long ton); Florida pebble (68@73%), 7¼d. ($9.80 per ton); Florida Peace River (58@63%), 7d. ($8.40 per ton); Tennessee high grade rock (78@80%), 7¼d. ($11 per ton); Algerian (63@70%), rock, 7¼d. ($9.38 per ton), and 58@63% rock, 6¾d. ($7.80 per ton).

We quote: Florida high grade, 78@80% rock, $9.50@$10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, $7@$7.50 per ton, delivered in New York. Florida, Peace River, rock, 58@63%, $4.50 per ton f. o. b. Punta Gorda. South Carolina crude rock, $4.25@$4.50; hot-air dried, $4.50@$5 per long ton f. o. b. Fetteressa, S. C. Tennessee, 78% rock, $4@$4.50 f. o. b. Mt. Pleasant, and 75% rock, $2.75@$3 f. o b. High grade Tennessee rock, ex-vessel New York, $9@$10 per ton. Hickman County blue-gray rock, 65%, and not over 3% iron and alumina, $2.50@$2.75 per ton f. o. b. mines. Concentrated phosphates, 13@15% av. P_2O_5 60c. per unit at sellers' works. Acid phosphates, $6.25 per ton for 14% in bulk f. o. b. Charleston, S. C.

Fertilizing Chemicals. — The contracts for Western tankage over 1900 are nearly all booked. Sulphate of ammonia is much easier, while New York blood is somewhat higher. Importations of potash salts were heavy. This week we note imports at New York of 2,650 bags muriate of potash, 7,000 bags and 639 tons manure salt, 3,551 bags sulphate of potash, and 50 tons kainit.

Articles.	F. o. b. Wks.	In N. Y.
Potash, muriate, 80@85%. 100 lbs.	...	$1.78
" " 95% "	...	1.81
" sulphate, 90% "	...	1 98½
" " 96% "	...	2.10½
" d'ble m're salt, 48@53% 100 lbs.	...	66c.
" " " 30% "	...	89c.
" kainit, 12.4% long ton.	...	8.70@8 95
" sylvanit.. per unit.	...	37@38c.
Sulph. Am., gas (25%)... 100 lbs.	...	2.75
" " bone ... "	...	2.70
Blood, dried, h-gr, Chi. per unit	1 70	.....
" " " N.Y., "	...	1.85
Azotine ... "	1.75@1.80	1.80@ 1.85
Bone black, diss., 17@18%...ton	...	16.00@16.50
Fish scrap, acid ... "	10.50@11.00	12 50
" " dried ... "	19 50@20	21 50
Tankage h. gr., Chicago.... "	14.50@15.00	21.00
" concentrated.. unit.	1.45@1.50	1.90@1.9
" bone. ... ton.	...	20.00@21.00
Bone, steam gd domestic . "	...	22.00@23.00

The quotations on potash are on the basis of foreign invoice weights, tares and analysis, in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts.

Nitrate of Soda.—This market continues firm, and spot sales were made at $1.72½ per 100 lbs., with holders asking up to $1.75. Shipments are unchanged at $1.62½@$1.67½ per 100 lbs., according to position.

Liverpool. Nov. 8.

(Special Report of Joseph P. Brunner & Co.)

Heavy chemicals are in light supply and in some articles makers are so fully sold that buyers have difficulty in placing fresh orders for this or next month's delivery. The following are particulars of exports of alkali and bleaching powder for the month ending October 31, 1899, as taken from the Board of Trade returns just issued: Total exports to all quarters, including U. S., alkali 319,838 cwts., bleaching powder 103,670 cwts.; to United States alone, alkali 46,030 cwts., bleaching powder 70,951 cwts. As compared with October, 1898, the total exports show a decrease of about 14¾% in the case of alkali, and also a small decrease in bleach, about ½%. For U. S. alone, however, the shipments of bleach show a substantial increase as compared with same month of last year. That there should be a falling off in total exports is hardly to be wondered at, considering the very heavy shipments which have been made for some months past. Soda ash is scare, and in some cases makers are refusing orders for balance of this year's delivery. For Leblanc ash prices have been advanced 5s. per ton all round. The range for tierces may be called about as follows: Leblanc ash, 48%, £4 15s.@£5; 58%, £5@£5 5s. per ton net cash. Ammonia ash, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton net cash. Bags are 5s. per ton under prices for tierces. Soda crystals are selling at £3 2s. 6d. per ton, less ½% for barrels, or 7s. less for bags, although certain favored markets are put on a special footing. Caustic soda is very strong and scarce, some buyers paying a premium for prompt delivery. The advance of 10s. reported in our last has this week been applied to Continental orders, which were previously excepted. Spot range is now as follows: 60%, £8 5s.; 70%, £9 5s.; 74%, £9 15s.; 76%, £10 5s. per ton net cash. For contracts over all 1900 5s. less would be accepted.

Bleaching powder is quoted at £5 15s.@£6 per

ton net cash for hardwood packages and is in moderate supply.

Chlorate of potash for balance of this year is quoted 3½@3⅝d. per lb. for crystals and 3⅝@3¾d. per lb. for powdered, less usual discounts, while 3d. per lb. net cash is nearest value for 1900 contracts.

Bicarb. soda is selling at varying prices according to export market, ranging from £5 5s. to £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is still tending downwards, and nearest values for good gray 24@25% in double bags f. o. b. here, are about £10 15s. @£10 17s. 6d. per ton, less 2½%.

Nitrate of soda is a little firmer at £8@£8 5s. per ton, less 2½% per double bags f. o. b. here as to quality.

IRON MARKET REVIEW.

NEW YORK, Nov. 17, 1899.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Nov. 18, 1898.		Week ending Nov. 17, 1899.		From Jan., '98.	From Jan., '99.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
An' racite	28	21,150	48	41,250	1,009,023	1,508,597
Coke.....	148	203,350	210	241,525	8,985,749	10,060,520
Charcoal.	20	6,125	29	7,375	272,096	260,065
Totals..	196	230,625	287	290,150	10,266,868	11,829,182

The iron market has been comparatively quiet. The demand for pig iron and billets for near-by delivery seems to have been about satisfied; and consequently there are no more of the sensational prices which have lately been quoted. The range on next year's contracts, however, is well maintained, and shows no signs of reduction.

Nothing has been done yet about ore prices for next season; but it is understood that coke contracts for the season have been largely placed at from $2.60 to $2.75 a ton. The ore question is causing some anxiety among furnacemen, but they will have to wait a month or so yet.

The car and locomotive builders are the most active customers for finished material just now, but there are some big contracts for structural work under discussion.

It is understood that the big Carnegie deal is off, or at least changed, so far that Mr. Andrew Carnegie will retain his interest in the Carnegie Steel Company, and the new company will not be organized or floated at present. The concern remains a strong and compact one.

Notes of the Week.

The German reports for the nine months ending September 30th show the foreign trade in iron and steel as below, in metric tons:

	1898.	1899.
Imports.....	£372,929	$805,857
Exports.....	1,231,993	1,152,833

This increase in imports and decrease in exports, which occur at the same time with an increased production, show how great the home demand has been.

Birmingham, Ala. Nov. 13.

(From Our Special Correspondent.)

The pig iron market has taken on another active spell and prices are looking upward, though no advances are noted in the quotations. The demand is feverish and the companies continue to sell more iron than they are making, taking thereon plenty of time for delivery. The Tennessee Coal, Iron and Railroad Company the Sloss Iron and Steel Company and the others in this State are sold up pretty well for the first half of the coming year and orders are being placed on the books for delivery during the last half of 1900. The raw material supply is being increased, more miners for the ore mines being brought into the State every week, while more coke ovens are being constructed as rapidly as possible.

The export business is not bad, and much iron product is being shipped to foreign countries at prices equal almost to domestic prices. The Tennessee Coal, Iron and Railroad Company has orders booked for 100,000 tons of iron for export during the coming year. Inquiries for export iron are brisk and the shipments next year across the waters will amount to quite a figure.

The following quotations are noted still: No. 1 foundry, $18.50@$19; No. 2 foundry, $17.75@$18.50; No. 3 foundry, $16.75@$17.50; No. 4 foundry, $16@$16.50; gray forge, $16@$16.25; No. 1 soft, $18.50@$19; No. 2 soft, $17.75@$18.50.

Mr. W. J. Sleep, manager of the warrant company yards in this State, states that 2,000 tons of iron are booked for his yards this month. There is a little iron leaving the yards. The addition to the warrant yards during the last four months does not amount to a great deal, and indications point to a wholesale removal the first of next year. The present renewal of activity in the market is likely to draw on the warrant yards, and it would take but a few weeks to clear the few thousand tons that are to be found in the possession of the warrant company.

The Trussville furnace, the second Ironton furnace, the two Sloss and Tennessee Company furnaces around Sheffield and Florence, the Gadsden furnace and the Williamson furnace are booked to go into blast before January 1, 1900.

The Alabama Consolidated Iron and Coal Company, owners of the Ironton, Gadsden and Mary Pratt furnaces, besides extensive coal and iron lands, were reported purchasers of the Woodstock Furnaces at Anniston. General Manager F. M. Jackson denies that any such deal had taken place or was being considered by the company.

The finished iron market is very active and prices are steady and firm. The rolling mills are in full blast and all the product manufactured finding a ready sale. The demand is good. Foundries and machine shops are doing well, yet with no indications of a change in the near future.

It is now announced that steel will be manufactured at Ensley within the next two weeks. At least 3 of the 10 furnaces will be ready by then to be put in blast and it is proposed to get them going as soon as possible.

Preparations are being made to refit the old steel mill at North Birmingham, recently purchased by the Union Steel and Chain Company. It will be ready for blast about June, of next year.

The Dimmick pipe plant is being prepared for at North Birmingham. Actual construction has commenced on the plant.

The Bessemer rolling mill will be ready for operation by January 1st. Employees are already being secured and it is intended to operate the plant steadily for some time. The work of repairing is being rushed and a lot of new houses are being put up for operatives.

Buffalo. Nov. 15.

(Special Report of Rogers, Brown & Co.)

The recent weakness in some forms of manufactured iron and steel has had no material affect on the foundry pig iron market in this territory. It is generally pretty well understood by those interested that this class of material has been all out of proportion to the price of ore, coke and pig iron, and it was expected as soon as old contracts were filled prices would right themselves. Sales of foundry and mill iron continue, but mostly for delivery during the last half of next year. There is very little being offered for the first half, because there is very little to be had. Prices remain unchanged and are given below on the cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $24@$24.50; No. 2 strong foundry coke iron, Lake Superior ore, $23.50@$24; Ohio strong softener No. 1, $23.50@$24; Ohio strong softener No. 2, $23@$23.50; Jackson County Silvery No. 1, $31; Southern soft No. 1, $23.50; Southern soft No. 2, $22.50; Lake Superior charcoal, $24@$25; coke malleable, $24@$24.50.

Cleveland, O. Nov. 13.

(From Our Special Correspondent.)

Iron Ore.—Interest here in the iron ore market during the past week has been centered in the shipping rates on the lakes. During the summer there was scarcely a week when there was not an advance on the rates, but if the rise was a phenomenal one the drop is more so. The newest rates are $1 from the head of Lake Superior and 80c. from Escanaba. There were no charters made on lower rates from Marquette but the natural supposition among marine men is that when the rate is fixed it will be 90c., provided the other rates do not take another drop before the vessel men have a chance to fix the Marquette rate at that figure. It is believed that many of the ore boats will be withdrawn and tied up for the winter and that the few which will remain out may be able to get the prices that are being asked now. Others say, however, that the withdrawal of 50% of the tonnage will not be sufficient to keep up the rates, as there is not enough ore to keep them busy.

Very few, if any, sales of ore were made during the past week. Instead of attempting to make further sales, the efforts of agents were directed toward filling orders and closing orders for ores already sold. The following are figures obtained for ore sales as they are made at present: Specular and magnetic ores, Bessemer quality, $6@$6.25; specular and magnetic ores, non-Bessemer, $5; red hematite ores, Bessemer quality, $5@$5.25; red hematite ores, non-Bessemer quality, $4@$4.50.

Pig Iron.—Total transactions in the pig iron market for the past week will foot up fairly well along the line of foundry metal. Not as much has been done in Bessemer iron as was reported last week. The market, however, remains very strong, with all kinds of iron regardless of any amounts sold. No further advance on the figures attained last week have been made. The following are the present quotations for pig iron f. o. b. Cleveland: Lake Superior charcoal, $25; Bessemer, $24; No. 1 foundry, $23.50; No. 2, $23; No. 1 Ohio Scotch, $22; No. 2, $22; gray forge, $20.

Philadelphia, Nov. 15.

(From Our Special Correspondent.)

Pig iron.—The Eastern Pennsylvania iron trade appears to be stronger than a week ago. There are no very positive evidences of any change. Brokers repeat what they have said so often. Agents of furnaces say they have no iron to sell. Buyers who state their experiences confirm what agents and brokers say. It is, if anything, more difficult to get a contract placed for forward delivery. There is nothing in sight on which to place a prophecy. Makers of pig iron are still the dictators of the market. It would be no harm to quote No. 1 foundry at $26, though the usual quotations are $25 to $25.50; No. 2 is $24.50 for best brands, with shadings down to as low as $23 on some. Gray forge has moved up to $21, and the only reason for the limited sales is that there is very little if any to be had.

Muck Bars.—Muck bars are more active at $32.

Billets.—Steel billets range from $40 to $42 and there is very little information to be had. The tendency exists for very large purchases and buyers are more hopeful to-day that they will be favored with concessions, though to other people the reason for their hope is not apparent on the surface.

Merchant Bar.—Merchant bar iron has advanced in price. The reason is that there is a very strong movement in some sections of the country on the part of car builders to make provision for the increased work which has recently swamped them. What the outcome will be on prices it is difficult to surmise, but some parties here think refined iron will reach 2.50c. The consumption will be extraordinary for an indefinite period.

Sheet Iron.—From the standpoint of the sheet iron makers there is nothing to warrant the impression that has gotten out that sheet iron is cheaper or easier to get. They say they would prefer to do more manufacturing and less selling for a while. They certainly will make no effort to invite buyers.

Merchant Steel.—The only business done within a week has been the re-assorting way. Some users of steel who were unable earlier in the fall to get all the steel they wanted are now looking up their deficiencies and contracting for material. There does not appear to be any change in quotations.

Plates.—Nothing can be added to the plate iron situation. There would be a good demand if the mill men were able to meet it. Everything is moving along swimmingly and there are buyers who are waiting their turn. Flange iron is 3.30c.; shell, 3.25c.; steel plate, 3c.

Old Iron Rails.—Old iron rails are held at $29 @$31. Old steel rails, $24.

Scrap.—This section of the State has been scratched over for scrap until there is none left and prices are nominal. There are offers out for choice railroad scrap at $28.

Pittsburg. Nov. 15.

(From Our Special Correspondent.)

The iron and steel market shows but little change in the past week. Prices for immediate delivery are just as firm and as high as last week, but there seems to be a disposition to shade the rates for delivery next year. The Bessemer pig iron production for next year has been practically sold up. It is stated on reliable authority that there is not much more than 20,000 tons of Bessemer unsold. It is also said that a large percentage of the production of 1900 will not be sold until late in the year. Bessemer iron for this year is being sold at prices ranging from $24.75 to $25.25, but even higher prices may be expected for spot delivery. Work was commenced yesterday on the new blast furnace for the Sharon Steel Company. It will cost, when completed, about $500,000, and will have a daily output of 600 tons. Steel billets are not quite as firm as last week and can be had for this year at $39@$40. There has been an easing up in prices for next year and up to July 1st billets are quoted at $36@$37. Steel plates are a trifle lower than for several months. The steel mills are catching up on orders, but there is still some to be delivered at low prices. Steel bars are still in demand and for immediate delivery 2.50@2.75c. is quoted. For next year's delivery 2.20@2.30c. is asked. Sheets are still weak and there is no immediate prospect of a change. The executive committee of the Iron and Steel Sheet Manufacturers' Association held a meeting during the week to discuss the situation. It is stated on reliable authority that the slump in prices was wholly due to the failure to perfect the plans for combining the interests. It is reported that with two exceptions the sheet manufacturers who consented to go into the deal just abandoned are ready to renew their options and assist in forming a combination on somewhat different lines than were under consideration. A general meeting of sheet manufacturers of the country will soon be called to consider the matter. One large sheet concern says it is not affected in the least by the

slump in prices noted last week, and that there is no neceessity of cutting rates.

Pig Iron.—The price for Bessemer at Pittsburg for next year will be a little higher than quoted last week, as the freight rate from the Valleys will be increased to 90c. The price in the Valleys for next year is $23.50 and in Pittsburgh, $24.40 foundry iron is a shade higher. No. 1 is quoted at $24@$24.50; No. 2, $23.25@$23.50; No. 3, $22.50@$23.

Steel.—Billets are not quite as strong as last week and are quoted at $39@$40 for immediate delivery and the price asked for next year is $36@$37. Steel bars are firm for spot delivery and cannot be had for less than 2.50c.

Sheets.—There is but little change in prices. No. 28 is a trifle lower than last week and is quoted at 3.05@3.10c. Galvanized sheets are lower owing to the decline in the price of spelter, and is now 75% off, with a freight allowance of 1Sc.

Ferro-manganese.—No change in prices is noted. Large lots can be had at $100, but for small lots $125 is asked.

New York. Nov. 17.

The local iron market continues to show a good volume of business, with prices firmly maintained. In foreign trade we note recent orders secured for electrical machinery in England amounting to $900,0000; good-sized orders for manufactured iron from Brazil, and a recent shipment of $12,000 worth of machine tools to Cuba, and an order for $12,000 worth of machine tools from Belgium.

Pig Iron.—Sales of iron for the first of 1900 continue, and some of these transactions are for good-sized lots. All irons are generally higher than they have been. We quote for early 1900 delivery, Northern brands, tidewater delivery: No. 1 X foundry, $25; No. 2, $24; No. 2 plain, $22.50. Southern brands, New York delivery: No. 1 foundry, $24; No. 2 foundry, $22.25; No. 1 soft, $22.50; No. 2 soft, $21.50; No. 3 foundry, $21.50.

Warrant Irons have fallen slightly during the week. Alabama No. 2 foundry has been $17@$16.50; No. 3, $15.50@$15.25; No. 4, $14.75@$14.50; gray forge, $15.25@$15.

Bar Iron and Steel.—The market continues firm and steady. We quote refined iron as high as 2.35c. on dock, and common, 2.15c. Soft steel bars, 2.55c.

Plates.—There is no change in prices. The local demand is for small lots. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 3.10@3.15c.; tank, 3/16-in, 3.20@3.25c.; shell, 3.25@3.30c.; flange, 3.40@3.45c.; marine, 3.45@3.50c.; firebox, 3.50@3.55c.; universals, 2.95c. Tank, ¼-in. plates for immediate delivery are quoted up to 4c.

Structural Material.—There is a good deal of building planned and orders for structural material continue to come in. It is stated that the new building in the boroughs of Manhattan and the Bronx projected this year to date foot up to $100,000,000 in capital invested, an increase of $50,000,000 over last year. We quote for large lots of steel at tidewater: Beams, 15-in., 2.50c.; tees, 2.55c.; channels, 2.55c.; angles, 2.45c., with higher figures for prompt delivery and small lots.

Steel Rails and Rail Fastenings.—Business in the East continues light. The principal event of the week has been the large contract for girder rails for Glasgow taken by the Federal Steel Company. We quote for standard sections $35@$36 f. o. b. Eastern mills. Smaller rails are quoted: 12-lb., $40; 16-lb., $40; 20-lb., $40; 30-lb. to 40-lb. $38; 40-lb. to standard, $37, with the usual advance for small orders. We quote angle bars, 2.45c.; fish plates, 2.40c.; spikes, 2.75c.

Wrought Iron Pipe.—Prices are firm and the volume of business good. Discounts are 50 and 10 for less than carloads, and 50 and 10 and 10 for carloads at makers' mill.

METAL MARKET.

New York, Nov. 17, 1899.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in October and year.

	October.		Year.	
	1898.	1899.	1898.	1899.
GOLD.				
Exports	$1,279 926	$772,867	$14,061 849	$33,650,705
Imports	16,738,353	7,562,876	144,081,169	41,831,297
Excess	I. $15,458,427	I. $6,790,009	I.$130,020,320	I. $8,180,592
SILVER.				
Exports	4.512 827	4 985,519	43,946,327	43,723,941
Imports	2,553,444	2,193,125	23,652,668	24,917,220
Excess	E. $1.959,383	E. $2,792,385	E.$20,293,659	E.$18,806,721

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending November 16th, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

Period	Gold. Exports.	Gold. Imports.	Silver. Exports.	Silver. Imports.	Total Excess, Exp. or Imp.
We'k	...	$24,985	$620,936	$38,326 E.	$559,655
1899..	11,648,849	13,667,526	25,513,134	3,298 234 E.	20,202,161
1898..	7,439,729	9s,709,,24	29,731,104	2,725 831 I.	61,264,722
1897..	48,175,528	13.493,757	40,854,016	2,724,983 E.	72,807,804
1896..	40,644,043	76,547,461	33,502 8 1	3,455,o51 I.	5,255,638

There were no gold exports; the imports were from the West Indies. The silver exported went chiefly to London; that imported came from the West Indies and Mexico.

The United States Assay Office in New York reports the total receipts of silver at 96,000 oz. for the week.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .47	$ 48¼
Peruvian soles and Chilean pesos	.43	.44½
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.74	4 79
Spanish 25 pesetas	4.78	4.82

Average Prices of Silver per oz. Troy.

Month.	1899. Lond'n Pence.	1899. N. Y. Cents.	1898. Lond'n Pence.	1898. N. Y. Cents.	1897. Lond'n Pence.	1897. N. Y. Cents.
January	27.42	59.36	26.29	56.5	29.74	64.79
February	27.44	59 42	25.89	56.0(	29.68	64.67
March	27.48	59.64	25.47	54.90	28.96	63 06
April	27 65	60.10	25.9[illegible]	56.02	28.36	61.85
May	28.15	61.23	2[illegible] 31	56.98	27 86	60.42
June	27 77	60 43	2[illegible].09	58.61	27.58	60.10
July	27 71	60 26	27.32	59.06	27.36	59.61
August	27.62	60.00	27.48	59.54	24.93	54.19
September	27.15	58 89	28.05	60.68	25 66	55.04
October	57.98	26.70	27.90	60.42	26 77	57.57
November	.....	.....	27.93	60.60	26 87	57.93
December	.....	.....	27.45	59.42	26.83	58.01
Year	.....	.....	26.76	58 26	27.55	59.79

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

Average Prices of Metals per lb., New York.

Month.	Copper. 1899.	Copper. 1898.	Tin. 1899.	Tin. 1898	Lead. 1899.	Lead. 1898.	Spelter. 1899.	Spelter. 1898.
Jan	14.15	10 99	22 48	13.87	4 18	3 65	5.34	3.96
Feb	18 00	11.28	24 20	14 08	4.49	3 71	6.28	4.04
March	17 54	11.93	23.82	14 28	4.37	3 72	6.31	4 25
April	18 43	12 14	24.98	14.60	4.31	3.63	6 67	4.26
May	18.25	12 09	25.76	14.52	4.44	3.64	6.88	4 27
June	17 93	11 89	25 85	15 22	4.43	3.82	5 98	4 77
July	18 33	11 63	29 63	15.60	4.52	3.95	5.82	4 66
August	18.50	11 89	31.53	16.23	4.57	4.00	5.6[illegible]	4 58
Sept	18 46	12.31	32 74	16.03	4 58	3.99	5.50	4.67
October	17.76	12.41	31 99	17.42	4.575	3 78	5.32	4 98
Nov	.....	12 86	.....	18.20	... ...	3.70	.	5.29
Dec	.....	12.93	.....	18.30	... ...	3.76	.....	5.10
Year	.....	12 03	.....	15 70	.....	3.78	.....	4 57

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c ; in February it was 17.02c.; in March, 16.35c.; in April, 17.13c.; in May, 17. 2 c ; in June, 16.89c.; in July 17.099 ; in August, 17. 42c; in September, 17.34c; in October, 16. 94c.

Financial Notes of the Week.

General business continues to flourish, but speculation continues to languish. There is much talk of an appeal to the Secretary of the Treasury for aid to the money market. Secretary Gage has unfortunately listened to this clamor, and on November 16th offered to buy $25,000,000 bonds, if offered before November 30th. There is no difficulty in obtaining money for legitimate business; and if speculators in New York and Boston, who have been carrying inflated industrials and doubtful coppers on borrowed money, find a pinch embarrassing, trade generally is not seriously injured thereby. This action—solely in the interests of Wall Street—is much to be regretted.

Upon completion of the Chinese orders, the silver market reacted to 26 15/16d., but advanced again on a special order for the French Mint, and closes steady at 58½c. in New York.

The statement of the United States Treasury on Wednesday, November 15th, shows balances in excess of ourstanding certificates as below, comparison being made with the statement for the corresponding day of last week:

	Nov. 8.	Nov. 15.		Changes.
Gold	$254,176,504	$255,096,917	I.	$920,413
Silver	9,067,654	10 497 639	I.	1,429 985
Legal tenders	15,216,406	15.334.812	I.	118,406
Treas notes, etc	1,033,804	1,012,620	D.	21.184
Totals	$279,494,368	$281,941,988	I.	$2,447,620

Treasury deposits with national banks amounted to $82,612,470, an increase of $538,402 during the week.

Exports of merchandise from the United States in October reached a total of $126,764,786,

Imports and Exports of Metals.

Port.	Week, Nov. 15. Expts.	Week, Nov. 15. Impts.	Year 1899. Expts.	Year 1899. Impts.
***New York.**				
Aluminum .....long tons	.....	.....	346	12
Antimony ore	.....	†100	.....	1,533
" regulus	.....	160	.....	999
Chrome ore	.....	.....	.....	2,196
Copper, fine	1,796	686	51.548	24,486
" matte	12	18	565	1,054
" ore	.....	.....	.....	45,123
" ash	.....	.....	.....	207
" sulphate	.....	.....	11,567	.....
" other	.....	.....	.....	135
Cop-nickel matte	.....	.....	.....	53
Ferro-mangan'se	.....	.....	.....	278
Iron ore	.....	.....	.....	50
" pig, bar, rod	.....	150	5,799	3,423
" pipe	404	.....	24,497	.....
" plates, sheets	.....	.....	748	146
" other	.....	.....	1,194	.....
Lead	1,825	900	48,689	47,755
" ore	.....	.....	.....	941
Manganese, ore	.....	1300	.....	6,180
Metals, old scrap	98	171	4,671	4,055
Composition	96	.....	6.673	255
Nails	877	.....	17,069	.....
Nickel	50	.....	1,762	105
" Ore	.....	.....	.....	4,071
‡Railr'd material	110	.....	7,283	3,823
Rails, old	.....	.....	15,417	.....
Spiegeleisen	.....	190	.....	1,023
Steel bars, plates	615	1375	10,358	14,868
" rails	912	.....	15.140	150
" hoops	.....	.....	831	100
" wire	408	.....	34,497	1.225
" not specl'd.	43	168	25,293	11.575
Tin	.....	10	.....	24,293
" dross or ashes	.....	.....	63	.....
" and black plates	.....	1509	.....	30,717
Zinc	.....	.....	272	358
" dross	.....	.....	437	.....
" ashes, skim	36	115	2,114	290
" ore	.....	.....	8,447	.....
" oxide	108	.....	3,830	288
†Baltimore.				
Alumina ..... bags	.....	.....	.....	3,479
Antimony regulus...casks	.....	.....	.....	286
Chrome Ore.....long tons	.....	.....	.....	2,300
Copper, fine	490	303	31,364	2,238
" matte	.....	.....	.....	.....
" sulphate	.....	.....	1,562	.....
" pipe	.....	.....	100	.....
Ferro-manganese	.....	.....	.....	2,163
Ferro-silicon	.....	.....	184	96
Iron pig, bar, etc.	.....	200	1,209	7,408
" ore	.....	.....	.....	229,768
" pyrites	.....	3,217	.....	47,084
Manganese ore	.....	3,150	.....	71,713
Metals, scrap	.....	.....	4,604	24
Nails	.....	.....	691	.....
Pipe, iron & steel	651	.....	12,465	.....
Spiegeleisen	.....	105	.....	1,187
Steel, bars, pl'es	.....	.....	34,580	.....
" wire	312	7	1,375	40
" rails	.....	.....	67,233	276
not specified	.....	.....	2,761	23
Tin	.....	.....	563	.....
" and blackplates	.....	135	.....	2,643
" other	.....	.....	43	.....
Zinc	.....	.....	25	5
" dross	.....	.....	231	.....
" skimmings	.....	.....	131	.....
***Philadelphia.**				
Antimony .....long tons	.....	.....	.....	10
Chrome ore	.....	.....	.....	3,060
Copper	373	.....	373	.....
Copper ore	.....	.....	.....	36,507
" old	.....	.....	.....	11
Ferro-manganese	.....	.....	.....	1,442
Ferro-silicon	.....	.....	.....	160
Iron, pig	.....	.....	.....	4.290
" ore	.....	116,874	.....	245,442
" pyrites	.....	.....	.....	10.153
Manganese ore	.....	.....	.....	79,063
Steel sheets	.....	.....	.....	510
Spiegeleisen	.....	.....	.....	2 070
Tin	.....	.....	.....	1.064
" and black plates	.....	.....	.....	4,356
Zinc dust	.....	.....	.....	10
" ore	.....	.....	3,093	.....

Total United States.§§

Articles.	Sept. Expts.	Sept. Impts.	Jan.—Sept. Expts.	Jan.—Sept. Impts.
Antimony long tons	.....	105	8	1,113
" ore	.....	238	.....	1,680
Copper fine	8,412	3,391	74 456	20,169
" su phate	193	.....	11,635	.....
" ore & matte	211	956	4,005	7.199
Iron, pig & bar	17,875	4,958	203,9 0	36,509
" ore	5,417	54,184	21 09[illegible]	425,475
Iron& steel plates	3,624	880	48,1[illegible]9	3.123
Iron & steel rails	27 060	....	185,997	1.123
" " wire	11,499	195	86,457	1,999
Steel, billets, rods, etc	1,600	2,577	63,720	22,024
Lead, pigs, bars & old	1	1	46	207
Lead in ore	4.235	6.879	52,371	64,2.8
Nails, cut	1,100	.....	7,679	.....
" wire	2,976	.....	27,0[illegible]9	.....
Tin	43	4,224	329	27,517
" plates	5	4,921	223	42 987
Zinc	8	106	5,764	904
" ore	1.713	.....	18,537	.....

*New York Metal Exchange returns. †By our Special Correspondent. ‡Not specified ‖Week ending Nov 10th §§ Monthly returns of the Treasury Department.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c pe lb on pigs, bars etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 5c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per b. in pigs and bars: 2c. on sheets, etc. Copper, tin and platinum are free of duty.

the largest amount for any month this year and the largest ever reported in one month, with the exceptions of November and December, 1898. For the ten months ending October 31st, the record is as follows:

	1898.	1899.
Exports	$987,897,707	$1,029,242,286
Imports	527,728,481	658,375,129
Excess, exports	$460,169,226	$370,867,157
Add excess of exports, silver	...	18,806,721
Total	...	$389,673,878
Deduct excess of imports, gold	...	8,180,592
Net apparent balance	...	$381,493,286

The movement of gold and silver in detail will be found in the usual place, at the head of this column.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending November 7th, gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

	1897.	1898.	1899.
Loans and discounts	$575,316,900	$687,867,400	$688,385,000
Deposits	636,331 800	777,000,000	744,801,000
Circulation	16,032,500	15,789,100	16,366,400
Reserve:			
Specie	102,856 300	156 406,000	137,074,100
Legal tenders	77,741,300	52,855,800	46,337,200
Total reserve	$180,598.100	$209,261,800	$183,411.300
Legal requirements	158,832,950	194,250,000	186,200,250
Deficit	$27,765,150	$15,011,800	....
Balance, surplus	...	...	$2,788,950

Changes for the week, this year, were an increase of $154,700 in circulation; decreases of $2,450.600 in loans and discounts, $11,067,200 in deposits, $3,386,900 in specie, $1,830,500 in legal tenders, and $2,450,600 in surplus reserve.

Shipments of species from San Francisco by water in October included $199,210 gold and $292,936 silver. For the 10 months ending October 31st, the exports were as follows:

	Gold.	Silver.	Totals.
Hongkong	$54,437	$4,356,788	4,411,225
Shanghai	.....	635,442	635,442
Japan	6,395	200	6,595
New Zealand	2,500	.....	2,500
South Sea Islands	3,937	1,000	4.937
Central America	4,636	5,964	10,600
Mexico	1,375	27,000	28,375
Total foreign	$73,280	$5,026,304	$5,099,674
Honolulu	2,305,595	152,857	2,458,452
New York	9,152,714	150,505	9,303,219
Totals	$11,534,589	$5,329.756	$16,861,345
Totals, 1898	39,452,330	7,615,380	47,067,710

The silver exports included $29,488 in Mexican dollars in October and $1,921,061 in the same coin for the 10 months, against $300,757 and $3,768,289, respectively, in 1898.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings of the corresponding dates last year:

	1898.		1899.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd.	$156,406,000	.....	$137 074,100	.....
England	160,102,180	.....	162,205,110	.....
France	366,855,385	$243,909,045	376,897,570	$233,398,335
Germany	120,330,000	61,990,000	117,110,000	60,330,000
Spain	55,310,000	27,380,000	68,000,000	69,530,000
Aus.-Hun	176 865 000	62,295,000	184 335,000	62 810,000
Neth'l'ds	21,555,000	33.105,000	15,740 000	28,910.000
Belgium	14,605.000	7,300,000	15 005.000	7.500,000
Italy	75.270,000	11,390,000	77 320,000	7 215 000
Russia	493,075,000	18,820,000	427,800,000	22,535,000

The returns of the Associated Banks of New York are of date of November 11th, and the others are of date of November 9th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the year up to November 2d, 1899, are reported by Messrs. Pixley & Abell's circular as follows:

	1898.	1899.	Changes.
India	£3,916,790	£4 509,525	I. £592.735
China	522,625	1,088,692	I. 566.057
The Straits	360,641	265,586	D. 95,055
Totals	£4,800,056	£5,863,793	I.£1,063,737

Arrivals for the week, this year, were £147,000 in bar silver from New York, £26,000 from Australia, and £22,000 from the West Indies; total, £195,000. Shipments were £92,000 in bar silver to Bombay, and £20,000 for Shanghai; total, £112,000.

Indian exchange continues steady, all the Council bills offered in London being taken at 16.09d. per rupee. It now appears that the balance of the Gwalior treasure will not be sold, and there has been some buying of silver in London on Indian account.

Other Metals.

Daily Prices of Metals in New York.

November	Sterling Exchange.	Silver. Fine oz. cts.	Silver. London. P'nce	Copper. Lake cts. ₩ lb.	Copper. Elec-tro-lytic. ₩ lb.	Copper. Lond'n standard £ ₩ ton.	Tin, cts ₩ lb.	Lead cts. ₩ lb.	Spelter, cts. ₩ lb.
11	4.86	59¼	27⅛	16⅛	16⅜	.....	27	4.57½	4.70
13	4.85⅝	59	27¼	16⅛	16⅜	73 0 0	26¾	4.57½	4 75
14	4.85	58¼	26⅞	16⅛	16⅜	72 15 0	26	4.57½	4.70
15	4.85¼	58¾	27⅛	16⅛	16½	73 5 0	26½	4.57½	4.70
16	4.85¼	58⅛	27	16⅛	16½	74 15 0	27¼	4.57½	4.70
17	4.85⅞	58½	27	16⅛	16½	74 17 6	27¾	4.57½	4.70

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market continues quiet but steady. A fair business is reported to have been done here both in Lake and electrolytic copper. Lake copper must be quoted at 16⅞@17c. Electrolytic in cakes, bars and ingots we quote at 16½c. and cathodes at 16⅜c. Casting is nominal at 16½c.

European buyers have been rather apathetic this week. The speculative market which closed last week at £74 5s., opened on Monday at £74, and declined that day to £73. On Wednesday the market was £72 15s., on Thursday £74 15s. It closes at £74 17s. 6d. for spot, £73 15s. for three months.

The demand for fine copper is slack. Refined and manufactured sorts we quote: English tough, £78@£78 10s.; best selected, £78 15s.@£79 5s.; strong sheets, £84 10s.@£85; India sheets, £83 10s.@£84 10s.; yellow metal, 6¾@6⅞d.

Copper production, as reported by Mr. John Stanton, who acts as statistician for the companies, was as follows for October and the ten months ending October 31st, in long tons (2,240 lbs.) of fine copper:

	October. 1898.	October. 1899.	Ten months. 1898.	Ten months. 1899.
U. S. reporting mines	19,429	20,680	181,540	190.601
U. S. outside sour.es	1,700	3,300	14,400	24,600
Total, U. S	21,129	23,980	195,940	215,201
Foreign reporting mines.	7,332	7,834	69,037	73,984
Totals	28,461	31,814	264,977	289,185
Exports, U. S.	10,810	11,360	117,152	93,555

The United States production in October showed an increase of 2,851 tons, or 13.6%. For the 10 months there was an increase of 19,261 tons, or 9.8%; of this gain 9,061 tons was from the reporting mines, and 10,200 tons from the outside sources. In United States exports there was a decrease of 23,597 tons, or 20.1%. The foreign reporting mines show an increase in production of 4,947 tons, or 7.2%, this year. The increase in production and decrease in exports indicate a consumption in the United States greater by 42,858 tons than last year.

Tin.—The market has again experienced a very great decline and a large business was done at the lower prices. Fluctuations were very violent and at times the metal sold here at considerably less than the import price. Sales ranged from 28c. to 25c., and at the close we quote 28¼c.

The foreign market, which closed last week at £130 15s., opened on Monday at £125, and that day declined £5, but regained £2 5s. On Tuesday the market was £124 10s., and on Wednesday £122 10s., then £118 10s. On Thursday £124 was reached, and it closes at £129 15s. for spot, £129 10s. for three months.

Lead.—The market continues strong and active and inquiry for both prompt and distant shipments is good. Consumption appears to be very large. Prices remain unchanged and we quote 4.55@4.60c. New York, 4.45@4.50c. St. Louis.

The European market has been quite active and our cables report a number of important transactions. We quote Spanish lead at £17, English lead 5s. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is quiet but firm at 4.47½@4.50c. Trading is very light.

Spelter.—The market has again suffered a decline, and it would appear that consumption in general, and for galvanizing purposes especially, has grown smaller. We quote the metal at 4¾c. New York; 4.50@4.55c. St. Louis.

In London good ordinaries are quoted at £20 15s., specials 5s. higher.

Antimony is without change. We quote Cookson's at 10½@11c.; Hallett's at 9¾@9¾c.; U. S. Star and Hungarian at 9½@9¾c.

Nickel is firm and demand very brisk. Quotations are firm at 40 and 45c., according to size of order.

Platinum.—Demand is good, and prices are firmer. In large lots we quote $17.75, and for smaller quantities, $18 per oz., in New York.

For chemical ware (crucibles and dishes), best hammered metal, we quote as follows: In lots of 250 grams or more, 67½c. per gram, and for smaller quantities, 70c. per gram; unmanufactured platinum will be supplied in same quantities at 2c. less per gram.

Quicksilver.—The New York price has been raised $1.50, and is now $49.50 per flask. Small lots are selling at $51@$52. The London quotation has been raised 2s. 6d. to £9 7s. 6d. per flask, with the same figure named from second hands.

The Minor Metals.—Quotations are given below for New York delivery:

	Per lb.		Per lb.
Aluminum			
No. 1, 99% ingots	35@37c.	Bismuth	$1.45@$1.50
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	38c up	Phosphorus	40@50c.
Alum.-bronze	20@23c.	Tungsten	70c.
Nickel-alum	33@39c	Ferro tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

LATE NEWS.

The Pennsylvania Railroad on November 15th received from the yards of the Pennsylvania Steel Company at Steelton 61 loaded cars, constituting the greater portion of the cargo of the third ship that will take the steel to India, where the great viaduct is being erected on the Burma railways.

Joplin District, Missouri.

(From Our Special Correspondent.)

The board of directors of the Missouri & Kansas Zinc Miners' Association met in Joplin Monday, November 13th, and adopted a new schedule for zinc ore and decided to call a meeting for Thursday night to discuss the building of a producers' smelter. The Joplin Club has also taken the matter up and Secretary Hamilton has secured this week subscriptions of over $250,000. The following circular letter was mailed to members of the association November 14th:

"From a perusal of the schedules fixed for the present week, you will notice a reduction of $7.50 per ton for 60 per cent. ore, the price being fixed at $33. We did this after thorough consideration of the present condition of the metal market. We are satisfied that our stand to conform to the position we took when the organization was formed, 'That the value of 60% ore should be, per ton, $7 for every 1c. per pound of the actual value of spelter,' will be approved by you and heartily endorsed. While spelter is lower than we expected it would be at this time, when all other metals have greatly advanced in price, we confidently believe that this condition will not last and that we will soon be able to raise the schedule price, being warranted in doing so by the advance in the price of spelter."

Plans and specifications for a smelter were presented to the Joplin Club, November 16th.

(From Our Special Correspondent.)

Trading in Utah mining shares on the Salt Lake Exchange was sluggish, with more sellers than buyers. No finds of special moment have occurred recently in any mines whose shares are dealt in here, though generally the favorites will hold their own.

There is some inquiry for Alice, but the offerings are too high. Anchor does nothing. Bullion Beck appears to have settled down to bed-rock. Chloride Point continues to soften. There is no accounting for these last drops, if the averment of the management is true that the mill is more than meeting current expenses. Daisy broke badly, but closes firm under 18c. Dalton & Lark fails to respond to the reported new ore uncoverings. Daly-West has shown considerable movement and is a shade lower than last week. The $30,000 dividend will be paid November 25th. Dexter apparently retains its strength. Eagle-Blue Bell did little business, though it is again attracting attention. In event of litigation with South Swansea, on the right to follow its vein, Four Aces will be the plaintiff.

Grand Central weakened to $5.70. The intimation grows that there will not be another dividend before 1900, indicating that its management is not a true prophet. Homestake has moved up several points. Horn Silver is unchanged; trading in these shares is almost entirely in the East. Joe Bowers offers nothing new and its shares appear to be pegged at 17c. Mammoth weakened early in the week, to recover on the affirmation of a December dividend of not less than $40,000. President-Manager McIntyre's new regime is certainly progressive—exactly what he said it would be. Mercur is slightly weaker. There is much comment as to the forthcoming presentment at the annual meeting in January. Northern Light has assumed a lower level. Ontario holds well around $8; there is more talk of the beginning of a new dividend era. Sacramento is in slightly better tone. Silver King remains the banner stock traded on here; the last sales were on a value of above $8,000,000 for the property. Star Consolidated is low. The signs are that it will rule below 50c. for some time. Sunbeam has moved up to 75c. and the outlook is favorable. South Swansea is lower. Its champions have recovered from the shock of a law suit with Four Aces.

MINING STOCKS.

Complete quotations will be found on pages 616, 617 and 918 of mining stocks listed and dealt in at:

Boston.	Spokane.	Mexico.
Colo. Springs.	Salt Lake.	Paris.
Denver.	San Francisco.	Rossland.
New York.	London.	Toronto.
Philadelphia.		

New York. Nov. 17.

The coppers are lower, and business in them is principally speculative. Amalgamated, after selling 800 shares at $85¾@$86 on Friday last, receded to $84⅞@$85½ on November 15th. Anaconda lost about 2 points, selling at $44¼@$44½ on Wednesday. Tennessee has been bid down to $14, with no offerings. British Columbia sold 50 shares at $10½, and closed at $10@10¾. Arizona Lead is reported sold at $10⅛, but to-day quotations are lower at $9⅞ bid.

American Smelting and Refining common made fractional gains from $35½@$36½ to $36⅝@$37½ on good trading, while the preferred stock ruled at $87@$88—about the same as last week. Flemington Coal and Coke of West Virginia was bid a fraction off at 28⅝, but holders continue to ask $30. Virginia Coal and Coke was steady at $28@$29. Sloss Sheffield common was quoted at $30 bid and $35 asked and the preferred $75 asked. Of Standard Oil of New Jersey there were sales on the curb at $459@$459¼, ex-dividend. This dividend amounts to $10 per share on the new stock, payable December 15th. This makes $33 declared this year, as against $31 in 1898.

Ontario of Utah brought $8@$8½ and Kingston & Pembroke of Ontario, Can., 75c.

In the Colorado section Isabella of Cripple Creek advanced on sales to $1.45, and is firm at the close. Acacia changed hands at 44c., Mt. Rosa at 41c., and Work at 32@33c. Breece of Leadville has declared its regular 5c. quarterly dividend; the stock is quoted at $1.85.

Of the Comstocks, Consolidated California & Virginia sold at $1.40@$1.45, and Sierra Nevada, which has just levied a 15c. assessment, holds at 40c.

Brunswick Consolidated of California was bid down to 20c. upon the announcement of a 3c. assessment. This is the first assessment since July, 1897, and makes the total levied to date $175,000. Standard is without demand at $2.50.

Homestake of South Dakota declared its regular monthly dividend of 50c. per share; the stock is quoted nominal at $65.

Auction sales were 284 shares Morning Star Consolidated Mining Company (par value, $5) at 20½c. per share and 200 shares Joseph Ladue Gold Mining and Development Company of Yukon at $4.75 per share. There was also a sale of a bundle of securities at $10 for the lot, which included 30 shares Playa de Oro Mining Company (par value, $100). 7,000 shares Denmark Mining Company of Colorado (par, $2), 2 shares Milton Mining Company, and 20 shares Little Hatchet Mining Company.

Miscellaneous dividends declared were the Park Steel Company, quarterly, of 1¾%, on preferred stock, payable December 1st; Niles-Bement-Pond Company, quarterly, of 1½% on preferred stock, payable November 29th; Bethlehem Steel Company, quarterly, of 50c. per share, December 1st.

Boston. Nov. 16.

(From Our Special Correspondent.)

The stock market organs have been announcing propspective booms and coming bull campaigns, but without the slightest effect on the public. The market actually has been the dullest and narrowest we have had for many weeks. The inside operators have had things altogether to themselves, and outsiders have carefully kept away. Certain stocks have been forced down evidently with a purpose, but the net result has been very small. The people who bought these shares some time ago in the cheerful belief that the great interests behind them would maintain prices are very badly disappointed; but no one can say that they do not deserve it. It is an old story, but some people never seem to learn by the past.

In the early part of the week Arcadian was the chief point of such interest as existed, and all sorts of reports were circulated, facts being very scarce, as usual. Later this stock was dropped, Boston & Montana becoming the center of attraction. In both cases it was professional work.

The Osceola Company has declared a $3 dividend, making $6 for the year. This was generally expected and had no effect on the market.

To-day the only feature in the market was Boston & Montana. A drive was made at this stock and it was forced down from $310 to $280, subsequently recovering a little, to $290. The other copper shares were heavy, with few sales and quotations chiefly nominal. Calumet & Hecla was quoted $745; Tamarack, $210; Quincy, $153; Osceola, $83; Wolverine, $41; Atlantic, $25; Baltic, $24. In the blind pool group Amalgamated was quoted at $85¾; Butte & Boston, $55; Arcadian, $32. A sale of United States Mining was made at $32½.

In other mining stocks American Zinc was $30 bid and Continental Zinc $5¼. In gold stocks Cochiti was $16; Gold Dredging, $13½; Santa Isabel, $11.

In the miscellaneous list Dominion Coal brought $45, while New England Gas and Coke was quoted at $22½ and Montana Coal and Coke $9½. United States Oil sold at $41.

The esteemed Mr. Lawson has been very quiet lately, and the people who bought stocks on the advice he gave them through the papers have been wondering what has become of him. On Tuesday the "Herald" published an extraordinary letter, purporting to be from a friend and admirer of his; but some people think that Lawson himself had a hand in its composition. It was a bitter attack on Standard Oil management of copper stocks. The anonymous writer asserted his possession of special information; but some absurd and evidently false statements deprive the letter of any effect, except with people who are very innocent indeed.

The tumble in the Joplin ore market is rather disturbing the plans of the new zinc companies. It might have been expected, but it comes at an awkward time—for some people.

San Francisco. Nov. 11.

(From Our Special Correspondent.)

Reports from the pumping work at the Comstock continue to be favorable, and it looks as if the companies would before long have an opportunity to show what there is in the abandoned deep levels. Opinions vary on this point, and some discussion is going on, in which, however, the public does not take a very active interest. The Electric Power Company has got its organization into working shape, and promises to begin on some actual construction soon.

Consolidated California & Virginia is quoted at $1.40@$1.45; Ophir, 50@51c.; Sierra Nevada, 40c.; Best & Belcher, 42c.; Mexican, 35c. In the middle stocks Hale & Norcross was higher, at 40c., while Potosi was sold at 29c. and Chollar at 22c. The Gold Hill stocks were firmer, Caledonia selling at 60c. and Overman at 16c.

The California Oil Exchange is doing a fair business and has quite a list of stocks. A few of these are producers and bring high prices, but the majority are only prospects yet, and sell accordingly. Among the quotations we note the following: Duquesne, $204 per share; Buckhorn, $4.50; Tidal Wave, $2.65; Barker Ranch, $1.10; Northfield, 75c.; Century, 70@75c.; Monterey, 25c. Our stock—Home Oil—has sold at $4,700@$4,750 a share.

Water is to be taken from the Mokelumne River, 4 miles above the Quartz Glen Mine, for a $200,000 power plant, which will be located on the river opposite Esperanza Mine in Tuolumne County. The canal will be 9 miles in length. Electric power will be supplied to the towns throughout that section.

A dam 337 ft. long and 14 ft. high has just been completed to impound the tailings from the California Mine in Nevada County. It is proposed to save these and treat them later.

Officers of the State Miners' Association, members of committees and others, who took part in the reception here to the American Institute of Mining Engineers, have been receiving very pleasant letters from Dr. R. W. Raymond, secretary of the Institute, in acknowledgment of the courtesies extended to the members in California.

London. Nov. 8.

(From Our Special Correspondent.)

The mining market has been much quieter this week and little or nothing is done in South Africans. Rumor-mongers have lost their influence owing to the censorship imposed on messages from South Africa. Even the most innocent of shareholders read war news and know that it is quite impossible for private messages dealing with the war to come over the cables. Consequently the invention of rumors on the Stock Exchange has had to be suspended for a time with the result that the market is very quiet. The average person has now come to the conclusion that the war will be a more lengthy and costly affair than was at first supposed, and shareholders are beginning to understand that not only will dividends be suspended for an indefinite period, but that a very large outlay of capital will be requisite before the mines can be put in working order again. It is probable also that the reconstructed Transvaal will have to pay the bill for the war besides bearing the cost of a permanent peace-preserving army, so that working expenses have little present prospect of reduction. However, the shareholders hold on like grim death, and show no signs of panic or desire to clear out.

The attitude of the leaders of the market is well exemplified by the action of the Consolidated Gold Fields Company, which in its report for the year ended June 30th last, announces that it does not intend to pay any dividend, although it has made a net profit for the year of just over £1,000,000. Some of the captious critics have wondered why so great a sum should be thus held in reserve, but we cannot doubt that the directors know their business, and are pursuing the right course. For my own self, I take their action as an infallible sign of the enormous expense the mines will be put to before they are made capable of renewing operations.

The copper market has attracted some attention this week, chiefly on account of the decision of the Amalgamated Copper Company of America to keep its accounts to itself in future. The paragraph in the "Engineering and Mining Journel" announcing that no more reports of the Anaconda Company would be published was the first intimation of this policy that was received in this country, and it caused not a little commotion in the press and among the public, where the action of the company is universally condemned. The Exploration Company has lost no time in giving up the English agency of the Anaconda and Mr. Baylies has resigned his seat on the Anaconda board as representative of the Exploration Company. The quotation of Anaconda fell back and simultaneously the shares of other copper companies, such as Rio Tinto, Capes, and Lyells, advanced. The metal people are predicting a general decline in the price of copper, but holders of copper shares do not take much notice of the prophecy.

Paris. Nov. 5.

(From Our Special Correspondent.)

The stock market, upon the whole, is less excited, and there is a much better feeling. Some of our journals are excited over war and the possibilty of getting something out of England, but they are not of much weight as a rule. Undoubtedly, there is a good deal of unpleasant feeling here, and a British defeat would be welcome to many; but of actual hostilities there is no danger.

Copper shares are lower generally, Rio Tinto losing 21 fr. during the week. This is partly due to lower prices of the metal, and partly to rumors of a rush of exports from your side. I cannot trace these to their starting point, but place no confidence in them whatever.

The shares of the Societe des Metaux have improved on account of the announcement that at the general meeting to be held this month, a dividend of 10 fr. per share will be proposed, after providing a sum of 900,000 fr. to liquidate the losses by the bear sales of copper by the late chairman and vice-chairman. It may be remembered that those gentlemen sold about 2,000 tons of copper without the sanction or knowledge of the board of directors, and paid for some time considerable monthly differences to defer delivery until the transaction became known, and they had to resign. The dividend paid last year was 30 fr. The company has been singularly unfortunate in its speculations.

The Transvaal gold stocks are still the center of interest and uncertainty. The selling movement, to which I recently referred, has been checked to a considerable degree, but the general state of mind is uneasy, and it would not take much to start the sales again. The war news is not favorable to a short contest; and the longer it lasts the worse for the mines.

M. Newmarck, president of the French Statistical Society, makes in his journal, the "Rentier," an estimate of the amount of French capital invested in the Transvaal, and places it at 1,500,000,000 fr. He then puts several questions as to what will happen in the alternative eventualities of the success of the English or the Boers. Should England be victorious, will she respect the Transvaal debt, and bear the charges of it? Will she maintain the privileges or guarantees accorded by the Transvaal Republic to certain undertakings, such as the National South African Bank, the Transvaal railroads, and the dynamite monopoly? Or will she follow the example of the United States, which refused to recognize the Cuban debt, and has not yet terminated the affair of the Porto Rico railroads? Will she make restitution to the mining companies of the capital the Transvaal Government seized on for its requirements, promising to restore it after the war? On whom will the cost of the war be made to fall? On mining undertakings? On private individuals? On the companies? Next, in the case of the Boers being successful, what will become of the mining companies, the management and property of which are principally English? Will they not be made to bear the whole or a part of the expenses of the campaign? Will they not be overwhelmed with taxes? Is there not reason to fear that the Boers will be less moderate the more they have suffered from the war, the preparations for it, and its consequences? M. Neymarck does not attempt to solve those problems, as, unfortunately, he says there is no code of international financial law. He, however, demands that the French Government should intervene if necessary to see that the rights of French citizens are respected, or, in default of the Government, that a committee should be formed for the defence of French interests.

A committee to watch affairs might do some good; but the talk of intervention is foolish, and does harm. Whatever movement is made should come from share-owners.

Sentiment and sympathy may induce one to favor the Boer side—practical and financial considerations are all pro-British. Azote.

STOCK QUOTATIONS.

NEW YORK.

Name of Company	Location.	Par val.	Nov. 10. H.	Nov. 10. L.	Nov. 11. H.	Nov. 11. L.	Nov. 13. H.	Nov. 13. L.	Nov. 14. H.	Nov. 14. L.	Nov. 15. H.	Nov. 15. L.	Nov. 16. H.	Nov. 16. L.	Sales
Acacia	Colo	$1	.44				.10		.10		.10		.10		1,500
Adam*	"	10	.10		.10		.10		.10		.10		.10		
Alamo	"	1	11¾		11¾		.11		.11		12¼	11¾	12	11¾	8,500
Amalgamated C	Mont.	100	85.75	85.63	85 00	84.65	86.00	85.50	86.25	86 00	85.50	85.25	87.38	87.25	
Anaconda, c	Mont.	25	45 5	44 25	45.00	44.50	45.25	44.25	45.00	44.88	44.50	44 25	45.75		5,870
Anaconda Gold	Colo	5	.4		.57		.54		.44		.55		.52	.49	
Anchoria Lel			.85		.80		.75		.80						
Argentum-Jun	Colo	2	.24		.18		.21	.20	.20		.22				1,500
Belcher	Nev	3	.28		.25				.23		.20				
Best & Belcher	"	3	.37		.35		.35		.41						
Breece	Colo	25	2.25		1.75		1.85		1.85		2 50				
Brit.Col.Copper	B. C	10	10 25	10.00	10.25	10.00	10.25	10 00	10 25	10.00	10.25	10.00	10 00	9.50	
Brunswick	Cal	1	.20		18		.18		.20		.20		.80	20	
Catalpa	Colo	10	.20				.20		.20		.20				
Challar	Nev	3	.25		.20		.15		.25						500
Comst'k T, st'k		100	.04		.05	.04¼	.04¾		.04¼		.08				2,000
" " bon's	"														2,000
Con. Cal. & Va		2¾	1 50		1.45		1 40		1.45		1.45				1,800
Cr & Cr. Creek	Colo				10¾		10¾		10¾		10¾				
Crescent	"	10	.15		.15		.15		.17		.18				
Crippie Cr. Con.	"	1	18½	.18	17¾		.17		.17		.17		.19¼	.18¾	4,500
Crown Point	Nev	3	.11		.10		.10		.10		.10				
Damon							.26								
Dead w'd Terra	S. Dak		.65		.65		65		.65		.65				
Elkton	Colo	1	1.22		1.22		1.245		1.25		1.25				
Eureka	Nev	20	.25		.25				.25		.25				
Father de Smet	Dak	100	.10		.10		.10		.10		.10				
Findley	Colo	1	.15	.14	.14¾		.14		.16		.15				3,000
Garf Con	"	1	1.22½		.21		.21		.22		.22½	21¾	.22½	21¾	1,000
Golden Age	"	1					.06		.05		.05				1,600
Golden Fleece	"	1	.25		.28		.28¾		.27		.27		.35	.30	1,000
Gould & Curry	Nev	3	.30		.30		.30		.30		.30				
Hale&Norcross	Nev	3	.35		.35		.35		.40		.40				
Homestake	S. Dak	100	65.00		65.00		65.00		65.00		65.00				
Horn Silver	Utah	25	1.15		1.20		1.20		1.2		1.20				
Iron Silver	Colo	20	.55		.57		.56		.57		.55				800
Isabella	"	1	1.30		1 40		1.30		1.45		1.45				
Jack Pot	"	1	.63		.62		.62		.63		.62				
Jefferson	"	1	.11¾		.12				.11		.12				
King & Pemb	Ont.	10	.50		.50		.50		.70		.50				200
Lacrosse	Colo	10	.15				.16		.16		.16				
Leadville Con	"	10	.08		.08		.08		.08		.08				
Little Chief	"	50	.16		17¾		.17		.18		.17¾				
Mexican	Nev	3	.8		.80		.80		.80		.85				500
Mollie Gibson	Colo	5	.27		.25		.28¾		.27		.24		.21	.25	1,000
Morenci Cop. pf	"	1	1.95		1.85		1.85		1.90		2.001		1 95	1.943	1,500
Moulton	Mont.	25			.25		.30				.25				
Mt. Rosa	Colo		.41		.40		.38		.37		.41		.42	.40	1,300
Occidental	Nev	3	.15		.10		.12		.10						
Ontario	Utah	10	.50	8.00	7.75		8.13		7 50		7.75				225
Ophir	Nev	5	.48		.40		.50		.65		.95				
Pinnacle	Colo	1													
Pharmacist		1	08½		08¾		.09		.08		.07				2,600
Phoenix	Ariz	1	.14	.10	.12	.11	.10		.12		.11				13,500
Plymouth Con	Cal	10	.10		.10		.10		.20		.20				
Portland	Colo	1	2.40		2.45		2.45		2.35		2 45		2.45	2 40	
Potosi	Nev	3	.34		.25		.33		.24		.30				600
Quicksilver	Cal	100	1.50		1.75		1.50		1 75		1 75				
do. pref	"	100	7.00		7.00				7.00		7 00				
Savage	Nev	2¾	.15		.10		.12		.12		.15				
Sierra Nevada		5	.35		.40		.40		.35		.55				600
Small Hopes	Colo	20	1 00		1.00		1.00		1.00		1.00				
Specimen	"	1	.10		.09		.10				.09				
Standard Con	Cal	1	2.60		2 75				2.50		2 75				
Tenn Copper	Tenn	25	16.00	14.50	16.00	14.50	16.00	14.50	16.00	14 5	14.00		15.00	14 00	
Tornado	Colo	1											.38	.34	
Union	"	1	.34		.35¾	.34	35¾	.30	36¾	.24	.38				
Union Con	Nev	2¾	.24		.25		.22		.20		.35		.24		
Utah Con	"	5	.07		.07		.09		.04						1,000
Work	Colo	1	.32		.34		.33		.33		.33		.34	.32	2,400
Yellow Jacket	Nev	5	.20		.23		.17		.18		.28				400

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	36½	35¼	36	35¾	36		37¾	36¼	37¾	36¾	38¼		12,198
" " pf		100	87¾	87	87¾	87	87¾	87	88	87¾	88	87¾	89		9,547
Am.S &W Co n		100	48¾	47¾	48	47	48	46¾	48¼	47¾	48¾	46¾	48¾		45,675
" pfr n		100	94	93¾	95¾		94¾	93	93¾		93¾		94¾		9,075
Central of N. J.	N. J.	100	123	120¾	124	120½	123¼	121	124¾	121¾	25	122¾	126¾		11,790
Col. C. & I. Dev	Colo	100					1¼		2						1 0
Col. Fuel & I	Colo	100	53¾	52¾	53¾	52¾	53¾	52¾	54	52¾	53¾	51¾	53¾		6,210
Col. & H.C.&I.	Ohio	100	18¾				20		20				19¾		1,75
Del. & Hud	N. Y.	100	120	119¼	120¾	118¼	123¾	118¾	120¾	119¾	12 3¼	121	123¾		8,565
Federal Steel		100	57¾	56	56¼	55¼	56¾	55¾	57¼	56¾	56¾	55	58		60,26
" " pf		100	79	78¼	78¾	78¼	78¾	78	79	78¾	78¾	78¼	79¾		7,964
National Lead	N. Y.	100	28¾		28¾	28	28¼		28¼				29		1,250
" " pf	Md	100					97		103¼	107¾	106¾				380
National Sa't		100	44	41	45	44	45	44	45	44	45	44	43¾	42¾	
" " pf		100	78¾	76	78¾	76	77¾	76¾	77¾	76¾	77¾	76¾	77¾	76	
N. Y., Ont. & W.	N. Y.	100	25¾	24¾	25¾	24¾	25¾	24¾	25¾	25¼	25	25	25¼		14,662
Reading, 1st pf.	Pa.	100	59¾	57¾	58¾	56¾	59	57¾	58¾	58¾	57¾	56¾	6		40,500
" " 2d pf.	"	100	31¾	31	30¾	29	30¾	29¾	31	30¾	30½	30¾	31¾		19, 17
Republic I & S.		100	34½		34	33¼	35	34	35	33¾			34		5,151
" " pf		100	69¾	69	69	68¾	70		70	69¾	70¾		70		1,429
Stan Oil c f N J	N. J.	10	474	473	475	473	473¾	471	473	471	9461	459	460	457	
Tenn.C.,I.&R.R.	Ala.	100	1 74	116	116¾	10	115	112	116¾	1 4¾	1 15¾	18¾	116¾		24,10

* Ex-dividend

PHILADELPHIA, PA.

Name of Company	L'cation.	Par Val.	Nov. 9. H.	Nov. 9. L.	Nov 10 H.	Nov 10 L.	Nov. 11. H.	Nov. 11. L.	Nov. 13 H.	Nov. 13 L.	Nov. 14 H.	Nov. 14 L.	Nov. 15. H.	Nov. 15. L	Sales
Am. Alkali			3.38		3.2	3 00	3 00		3.00		3.00		3.13	3.00	3,445
" " pf.							1 75	1.25	1 75						175
Bethlehem Irn	Pa.		60.25	60.0							60.0	59.50	9.50		1,350
Bethlehem St'l	"	$50	19.50	18.50	18.88	18 75			18.63	18 50	19.00		9 00		2,170
Cambria Iron	"	50	44.25		44.25	44.00	44 00		43 86		44 00		44.00		268
Cambria Steel	I.T.	50	21 00	20.25	20.5	20 0	20.13	20.00	21.50	19.63	20 88	20 00	20 25	19.75	17,4 0
Choctaw. pref	Pa.	50	45.75	45 00	45 00		45.00		45.00		45 00				255
Lehigh Val	"	50	26.50	26.00	26.00	25.50	25 88		26.50	26.00	27 25	26.50	27.13	26 38	8,681
Penna. R. R	"	50	65 25	65.00	65 00	64.50	65.00	64 50	65.00	64.50	65.0	64.88	64 75	64 50	1,118
Susq I & S	"		4.63	4.50	4.75	4.63	4 75	4 63	5.25	4.75	5 25	5.13	5.25	5.13	4,561
United Gas I	"	50	160	159	158		158½	158	160	157					982
Welsb. of Can	Can.	100													
Welsb. Coml	"	100													
Welsb Light	"	100					45.00		45 0		46.00		46 00		362

Total shares sold, 40,564.

SALT LAKE CITY, UTAH.* Nov. 3.

Stocks.†	No. of shares	Par val.	Bid.	Asked.	Stocks.†	No of shares.	Par val.	Bid.	Asked
Ajax	800,000	$10	$.90	$1.50	Homestake	400,000	$1	$0.09	$0 12
Alice	400,000	25	.45	1.10	Horn Silver	400,000	25	1 00	1 50
Anchor	150,000	10			Joe Bowers	400,000	1	.11¾	18
Buckeye	500,000	1	.02¾	.04	Little Pittsburg	400,000	5	.05¾	.07¾
Bullion-Beck & Ch	100,000	10	3.75	3.88	Lower Mammoth	150,000	1	5.25¾	.53
Centennial Eureka	30,000	50			Mammoth	400,000	5	3 01	3.25
Chloride Point	800,000	1	.23¾	.27½	Mercur	200,000	25	6 81	7.00
Daisy	500,000	3	.21	.21¾	Northern Light	400,000	5	18¾	.19
Dalton	800,000	5			Omaha	300,000	2	13	.20
Dalton & Lark	2,500,000	1	.04	.08	Ontario	150,000	100	8.00	9 00
Daly	150,000	20	1.60	1.70	Richmond-Am	800,000	1		
Daly West	150,000	20	12 94	13 20	Sacramento	1,000,000	5	3.8¾	.83
Dexter	200,000	5	3.25	2.50	Silver King	150,000	20	51 25	52 50
Eagle	150,000	1	.04¾	.06	Star Consolidat'd	500,000	1	.46¾	.50
Eagle & Blue Bell	250,000	1	1 60	2.00	Sunbeam	250,000	1	.61¾	62¾
Emerald	300,000	1			Sunshine	250,000	10	31	33
Four Aces	250,000	1	.09	13¾	Swansea	100,000	5	3 80	3 88
Galena	100,000	10	.35	.45	South Swansea	150,000	1	1.31¾	1 36
Geyser-Marion	300,000	5	30	36	Utah	100,000	1	6	1 10
Grand Central	250,000	1	5 92½	6 00	Valeo	200,000	10	.75	.70

*From Our Special Correspondent. † Utah companies. § Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

BOSTON, MASS.†

Name of Company.	Par val.	No. of shares.	Nov. 9. H.	Nov. 9. L.	Nov 10. H.	Nov 10. L.	Nov. 11. H.	Nov. 11. L.	Nov. 13. H.	Nov. 13. L.	Nov. 14. H.	Nov. 14. L.	Nov. 15. H.	Nov. 15. L.	Sales
Aetna, cons. g	$25	100,000													50
Adven'u'e,Cons	25	100 000	7.00	6.50	7 00	6 50							6.50		500
Allouez	25	80,000	4.50	4.00							4.0	3.75		4.00	8.7	633
Am. Z L & S	25	60,000	40.00	38 00	35.50	35.00	36.00	35.00	35.00	34.00					650
Anaconda	25	1,200,000									44.88				00
Arcadian, c	25	150,000	38.50	35.00	32 0	28.00	34.00	28.00	32.0	30.0	32.50	31 50	33 00	31.75	9,9 9
Arnold, c	25	60,000	8 50	8.00					8.00	7 75	7 75		8.13	8 00	640
Atlantic, c	25	40,000	28.00	27.50					28.00	25 75	26 5	26.00	25.50		25.50	25 00	800
Baltic, c	25	100,000	25.00						24.50	24.25	25.00				24.25	24.00	512
Bingham, c&g	10	190,000	16.00	15.50	15.50	15.00	15.00	6.00	15.00						14.50		1,695
Bonanza, g&g	10	300,000	1.25		1.33	1 18	1.25				1.25						1,490
Boston	2	240,000											6. 0				50
Boston & C C	2	20 ,000	35										3½				110
Bos.&Mon,Tr R	25	150,000	320		320		320				312	310	310		300	290	634
Breece	25	200,000															
British Col	5	100,000			9 88												50
Butte & Bost., c	10	200,000			66.0		65.00		65.00		65 0	64.0	65.00	63.00	62 50	55.00	775
Cal. & Hecla, c	25	100,000	765		745				755	745	747	745			745		54
Catalpa, s	10	300,000															
Centennial, c	25	9 ,000	26 0	25 0	23 5	23.0	23 00	21.5	24.50	22 50	22 0		23.0	22 00	1,605
Central Oil	25	80,720	22.5	22.3	22 3	21 00			21.00	21.75	21 75				2,595
Cochiti, s	10	150,000			17.50	16.8	16.25		16 0				16.25	16 0	1,171
Cont.ZLMg&Sm	10	110,000	6.00	5 75					5.75	5.0	5.5	5 25	5.25	5.13	885
Copper Range	10	100,000	41.50	41 25	41 0	40 0			40 0				39.0	39 0	1,940
Crescent, s	1	300,000													
Dominion Coal	100	150,000	46 5		46.25	46 00	46.00	45.0					45 25		1,151
do. pref	100	20,000							117						8
Federal Steel	100	461,813	78 75	86.75	87 00	85.75	86.5	85 5	87.00	85 00	87 25	85.75	86 5	85.13	11,640
do. pref	100	532,610	79.50		80		78.75		78.00		78 75	78 00	79 00	78.0	79 0		937
Franklin, c	25	130,000	19 00	18 7	18 0	17.50	18 00	17.00	17 00		17 0		17.25	17.00	1,152
Gold Co n	25	40,000	5		5		5						5		2,000
I. Royal Con. c	25	100,000	36 50	36.00	34 00	32.7	33 75	33.0	33.0	32.00	33.25	33.00	32.0	31 0	1,951
Mass. Con	25	100 00	0.00		10.00		10 0	9.7			10.25	10.0			655
Mayflower	25	100,0 0	3.75		3 75		3.5		3.50				3 50	3.00	1,025
Melones	10	167,577							1 88	1.75					40
Merced, g	15	100,000					10.0								55
Michigan	25	100,000	9.0		9 00										8.0
Mohawk, c	25	100,000	22.0		22.00	21.00	21 00		22.00	21 0	21.75	21.63	21 50	21.00	525
Montana C.&C.	25	201,000	9.50		9.00		9 00		9.5	9.0	9.7	9 50	9 50	9 18	2,515
Napa	7	100,000			11.00										150
New Idria	5	100,000							13.00						100
N.A.Gold Dr'g	10	100,000	9.0	7.90	16.00	15 00	15 00				14 0		18 50	18 0	1,800
Old Colony, c	25	100,000	6.5		7 00	6 25	6 25	6 00			5 75				745
Old Dominion,c	25	150,000	30 50	30 0	30 0	29.00	30.0	29 5	29 50	29 5	29 75	28 5	29.00		966
Osceola, c	25	93,000	85 00	83.5	84 5	83.00	85.00	83.50	84 0	8 .0	84 0	83.50	84 00	83.00	1,1 8
Parrot, s c	25	249,85	45.00	43.50	44.00	42.50	42.75		42.75	42 0	53 0	42.00	42 75	42.00	2,215
Pioneer, g	10	100,000							2.00						60
Quincy, c	25	100,000	155	153	155	153	153		154		153		153		129
Rhode Island	25	100,000	5.25	5.00	5 00		5.50		5.00		5.00		4 75	4 18	8 5
Santa Fe, g. & c	10	250,000	8.50	8 25	8 50	7.75	8 00	7.75	7 88	7 50	8 00	7 75	7.75	7.50	4,335
San. Ysabel, g.	5	130,000	10.00	9.50	10.0	9.25	10 50	9.75	11 00	10 38	11 00	10.50	11.00	10 75	5,565
Tamarack, c	25	60,000	215		4.75	4.5	215	210	41 3½				4.3	210	240
Tecumseh, c	25	80,000			4.75	4.5	4.88		5 0	4.50					435
Tri Mountain	25	100,000	10 00		9.80	9.38							9.75		949
Union C. L	25	80,000	4 00												500
United States	25	250,000	34.25	31.00	32.00	31.25	31 63	31 50	31.75	31.5	31.50		31.63	1.88	12,215
U. S. Oil	25	100,000	43.5	41.75	41.50	40 75	41.00		41 25	40 25	41.00	40.50	41.00	40.63	6,531
Utah Cons,g &c	5	3 0,00	38 50	36.75	36.50	35.25	37 50	35.00	35 88	35.00	35.75	35 50	35 00		2,217
Victoria	25	100,000	5.00	4.88	5.00				4 75				4.87		580
Washington	25	40,000											1.63		140
White Knob	100	50,000									15 0	11.50	15.50		220
Winona, c	25	100,000	9.0	8 75	8 75	8.0									570
Wolverine, c	25	60,00	44.75	43.50	43.00		43 25		42.50	42.00	42.00				770
Wyandotte	25	100,00									2 5		2.50		150

Official quotations Boston Stock Exchange. Total sales, 93,050.

COLORADO SPRINGS, COLO.†

Name of Company.	Par val	Nov. 7.* B.	Nov. 7.* A.	Nov. 8. B.	Nov. 8. A.	Nov 9. B.	Nov. 9. A.	Nov. 10. B.	Nov. 10. A.	Nov 13 B.	Nov 13 A.	Nov. 14. B.	Nov. 14. A.	Sales.
Alamo	$1			.10¾	.11¾	.11	.11¾	.11¾	.11¾	.12	12¾	.11¾	.12	10,00
Anaconda	1			.57¾	.58	.58	59¾	.61	6.5¾	.50¾	.51¾	.50	.51	4,62 0
Arg'ntum J	1			.22¾	.24	.19	.23	.20	.21¾	.22	.23	.21¾	.22	5,10 0
Cadillac	1			.02¾	.02½	.02½	.02¾	.02¾	.03¾					20,00
C. C. Con	1			.18¾	.18¾	.18¾	.18¾	.18	.18¾	17¾	.17¾	.17¾	.17¾	17,10 0
Dante	1			.21¾	.21¾	.22	.21¾	.21¾	.21¾					62,0 0
ElktonCon	1		1 19	1.19¾	1.21		1.22½	1.23	1.25½	1 30		1.25	1.26	33,900
El Paso G	1				.39	.39¾	.39¾	.39	.39½	.39¾	.39¾	.39	.39½	2,500
Favorite	1													33,0 0
Findley	1			.15¾	.15¾	.15¾	.16¾	.15¾	.16	.15¾	.16	.15¾	.15¾	27,5 0
Golden Fl	1			.29	.29			.30		.30	.35	.30	.35	2,200
Gold Hill	1			.03¾	.03¾	.03¾	0 3½	.03¾	03¾					2,000
Ing. Con	1			.12¾	.12¾	.13¾	.13¾	.13¾	.13¾					21,0 0
Isabella	1		1.35	1.3 3¾	1.35¾	1 36	1 36	1.36	1.37	1 48¾	1 48¾	1.49¾	1 49¾	2,25
Jack Pot	1			.64¾	65		.63	64	.64¾	.63	.64	.63	.63¾	12,2 0
Lexington	1			.31¾	3.3¾	.29¾		.31¾						82,000
Magnet R	1			.05¾	.06¾	.05¾	.05¾	.05¾	.06¾					20,0 0
Maton	1			.31		.32¾	.33	.32¾		.32	.32¾	.33	.33¾	17,50
Midway	1			.07¾	07¾	.07¾	.07¾	.07¾	.07¾					16,0 0
Mobile	1			.04¾	.04¾	.04¾	.04¾	.04¾	.04¾					11 0 0
Mollie Gib	1									25	.28	.22½	.22¾	5 0
M ntreal	1			11¾		.13¾	13	12¾	.12¾					19,0 0
Moon-A'c'r	1			.79		.77¾	.78	.78	.75	.79	.74	.78		300
Mt. Rosa	1								.39¾	.40	.40	41		
New Haven	1		.05	.07¾	.05¾	.05¾	04¾	.05						130,00
Oriole	1		.07¾	08	.08	.09¾	.08	.08¾						48,000
Pilgrim C	1			.12¾	1 3¾	11	.10¾	.10¾						42,000
Pinnacle	1		.34¾	.33¾	.34¾	.34¾	.33¾	.34	.33¾	.33¾	.33	.33¾		57,50
Portland	1		2.49	2.50	2 49	2.50	2.45	2.49	2.43	2.44	2 45	2.46		6,600
Prince Alb	1		06¾	.07	.06¾	.06	.06¾	.06¾						2,500
Princess	1		.06¾	.05¾	.06	.06¾	.05¾							26,0 0
Pythias	1		.09	.09¾		.09	.07¾	.08¾						80,000
Specimen	1		.14¾	14¾	.14¾	.14¾	.14¾	.14¾						18,'00
Tornado	1		.49¾	.50	.49¾	.5 3¾	.49¾	.50	.49¾	50	.49¾	50¾		17,500
Trachyte	1		.08¾	.08¾	.08	.08¾	.08	.08¾						4,000
Union	1		.36¾	.37	.35¾	.36¾		.36	.36¾	.36¾	.35¾	.36		10,5 0
Uncle Sam	1		.05¾	.06¾	.06¾	.07	.06¾	.06¾						35,500
Vindicator	1					1.47¼	1 46¼	1 47¾	1.46¾	1.48	1.48	1.49¾		5,700
Work	1		.33¾	.34	33¾	.33¼	33¾	.34	34	34¼	.33¾	.33¾		11,'00

‡ Colorado Springs Mining Stock Exchange. Sales for four days ending Nov. 11th, 1,015,625 shares; quotations for N v 18th and 14th by telegraph. * Holiday.

SPOKANE, WASH.* Nov. 10.

Name of Company.	Par val.	Prices. H.	Prices. L.	Sales.	Name of Company.	Par val.	Prices. H.	Prices. L.	Sales.
Admiral Dewey	$1				Mountain Lion		1 14	1.05	9,550
Anaconda	1				Noble Five	$1			
Athabasca	1				N rth Sam Poll				
Ben Hur	1				Novelty	1			
Black Tail	1	.15	11		Old Ironsides	1			
Buffalo Hump	1				Palo Alto	1			
Buffalo L. Tender	1				Pearl	1			
Cariboo (Camp McK)	1				Princess Maude	0.10	.10¾	09¾	12,000
Cnespa Blue Jay		0.9¾	.03¾	10,00	Quilp				
Conjecture					Rambler Cariboo	0.25	.61	57	7,000
Crystal	1	.05	02¾	8,5 0	Rebate	0.10			
Dardanelles	1				Republic (Con)	1			
Deer Trail No. 2	1	.22	.19	1,00	Res M & M		.18	.15¾	2,000
Evening Star	1				San Poil	1			
Gold Leige		.07¾	05¾		Slocan Star	1			
Golden Harvest	1	.03¾	.03¾	29,000	Sullivan	0.10	.13	.09	5,000
Good Luck Con					Summit	0.10	.00¾	00¾	
Hit or Miss	0 05				Syndicate				
Insurgent	0 10	.03¾	.02¾	26,000	Tom Thumb	1	.22	11¾	22,000
Jim Blaine

STOCK QUOTATIONS.

DENVER, COLO.‡

Name of Company.	Par val.	Nov. 6 B.	Nov. 6 A.	Nov. 7 * B.	Nov. 7 * A.	Nov. 8. B.	Nov. 8. A.	Nov. 9. B.	Nov. 9. A.	Nov. 10. B.	Nov. 10. A.	Nov. 11. B.	Nov. 11. A.	Sales.
Mines:														
Anac'da G.	$5	.49¼	.50			.52¼		.59		.60¼	.60¾		.59	6,600
Arg. J.	1	.22						.19		.20¾		.21¾		
Bankers	1	.16	.17			.16				.15¾		.15		
CrippleC.C.	1	18¾							.19¾					
Della S.	1					.02								
Elkton Con	1									1 21			1.25¾	
Findley	1													
Garf. Con.	1						.22¾	.22¾	.23				.22¾	
Gold Coin.	1													
Goldstone.	1	.03	.03¼			.03		.03		.03	.03¼		.03¼	
Indepnd'nce	1					.50								
Ironclad.	1							.06¼	.07	.07¼	.07¾		.07¾	2,000
Isabella.	1	1.29	1.33			1.34	1.36	1.33¾	1.36	1.32	1.38		1.33¾	2,350
Jack Pot.	1	.63	.67										.66	
Jefferson.	1		.10							.09½	.10¾			1,000
Keystone	1						.14¾		.17¾				.18	
LosAngeles	1	.09¾				.09¾	.10	.09¾		.09¾	.09¾	.09¾	.09¾	
Mollie Gib.	5		.29							.25		.25		
NewZealnd	1	.45	.50				.48						.51	
Ophir	1	.69				.72¾	.74	.70		.70				100
Pharmacist	5	18¾				.16						.19¾	.20	1,000
Portland.	1	2.40	2.47				2.47		2.48	2.48	2 51		2 52	500
Specimen.	1	.12¾					.14¾				.14¾		.14	2,000
Union Gold	1	.38	.40					.36						
Vindicator.	1											1.49		
Work	1											.32¾		
Prosp'cts:														
C C Imp	1	.007	.007¾			.006¾	.007	.006¾	.007	.006¾	.007	.006¾	.007	80,000
Illinois	1	.01¾						.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	5,000
Old Gold	1	.02¼	.02¾			.02¼	.02¾	.02¾	.02¾	.02¼	.0.3¾	.02¼	.02¾	84,000
Puritan	1	.02¾	.03¼				.02¾	.03¾		.02¾	.03¼	.02¾		229,500
Miscell.:														
Acacia	1	.50	.51			.5 ¾	.52	.43¾		.45		.44¾		
Alamo	1	.1 ¾	.11¾					.10¾		.1 ¾		.11¾		3,000
Aola	1	.06¾				.06¾				.06¾	.07	.06	.07	
Battle Mt.	1	.39				.38	.40			.38	.40			1,000
Bob Lee	1	.03¼				.03¼		.03¾		.03¼	.03¾	.03		
C. C. & M.	1	.23¾				.21¾	.23¾	.21		.21	.21¾			3,000
De Beers	1													
Des Moines	1		.07¾				.0 ¾	.07	.07¾	.0 ¾			.07¾	4,000
Favorite.	1	.05¾					.05¾	.06¼	.06¾			.06		2,000
G'ld'n Eagle	1													
Goldstone.	1	.03	.03¼			.03		.03		.03	.03¼		.03¼	
Gr'nite Hill	1		.09¾					.05		.01	.06			
Magnet R.	1					.05¾	.05¾		.06		.06	.05¾	.06¾	2,000
Mobile.	1	.04¾						.04¾						
Mt. Beauty.	1		.15¾			.14¾		.14¾	.15		.14¾		.14	5,000
Trachyte	1		.08¾											

‡ Official Quotations Denver Stock Exchange. Total sales, 392,650 shares. *Holiday.

SAN FRANCISCO, CAL.

Name of Company.	Location.	Par. value.	Nov. 9	Nov. 10.	Nov. 11.	Nov. 13	Nov. 14.	Nov. 15.
Alpha Con.	Nev.	1.00	.03	.03	.03	03	.04	.03
Alta	"	2.00	.03	.03	.03	.02	.03	.01
Andes	"	3 00	13	.12	.12	.13	.16	.12
Belcher	"	3 00	31	.30	30	.28	.33	.29
Best & Belcher	"	3 00	40	.38	.36	.38	49	.41
Bullion	"	1.00	.05	06	.06	.05	.06	06
Caledonia	"	3.00	60	56	.50	.54	.61	.56
Challenge Con	"	3.00	.22	.20	20	.20	.22	.21
Chollar	"	3.00	.22	.21	.20	.19	.29	.21
Confidence	"	3.00	67	.67	.65	.60	.70	.60
Con. California & Virginia	"	2 50	1 40	1.35	1.30	1 35	1 50	1.35
Cons. Imperial	"	1.00	.02	.02	.02	03	.01	.01
Crown Point	"	3.00	.12	12	15	.11	.11	.11
Gould & Curry	"	3.00	24	23	.23	.22	.24	.22
Hale & Norcross	"	3.00	.40	39	38	38	.42	.35
Julia Con	"	1.00	02	.02	.02	.02	.02	.02
Justice	"	2.00	.03	.03	.03	.03	03	.02
Kentuck Con	"	1 00	.03	.02	.02	.02	.03	.02
Mexican	"	3.00	.35	.32	31	.34	.51	.42
Occidental Con	"	3.00	.18	13	.13	.13	.13	.14
Ophir	"	3.00	.51	.50	.67	.76	.99	.97
Overman	"	2.00	.15	.15	.15	.14	.17	.15
Potosi	"	3.00	.29	.28	.28	.27	.32	.28
Savage	"	2 50	15	15	.15	.15	.17	.16
Seg. Belcher & M	"	2.00	.06	.06	.06	.06	.05	.04
Sierra Nevada	"	3.00	.39	37	36	.36	60	.40
Standard	Cal.	10.00	2 85	2.85	2.85	2 85	2 85	2.85
Union Con	Nev.	2.50	.27	27	.23	.26	.38	.30
Utah Con	"	1.00	08	.08	.07	.08	.09	.09
Yellow Jacket	"	3.00	.22	.21	.20	.18	.24	.20

Official telegraphic quotations of San Francisco Stock Exchange.

TORONTO, ONT.*

Name of Company.	Par val.	Nov. 7. B.	Nov. 7. A.	Nov. 8. B.	Nov. 8. A.	Nov. 9. B.	Nov. 9. A.	Nov. 10 B.	Nov. 10 A.	Nov. 11. B.	Nov. 11. A.	Nov. 13. B.	Nov. 13. A	Sales
Ontario.														
Alice A	$1	.08¾	.10	.09½		.07¾	.10	.08¼	.11	.09¾	.10¾	08	.12	500
Empress	1	02¾	04	02¾	.04	02¾	04	.03	.04¾	.04	.02¾	.03¾		
Golden Star	1	30	32	.31	.33	.31	.33	32½	34	.34	.36	31½	35	6,950
Hane Reef	1	.20	.26	20	.28	.20	.28	.20	.28	.20	.28	.20	.25	
British Col.:														
Athabaska	1	.34	.38	.34	.40	.33	40	31	.39	31	.41	.35	.40	800
Big Three	1	12	15	12	.15	.11¾	.14¾	11¾	.14¾	.1 ¾	.14	.1 ¾	.15	2,000
Fr'd'n&G.C.	1	.28¾	31	21	.31	.27	.31	.28	31	.27	31	.27½	.31	2,000
Crow's N. C.	5	35.0	40.0	32 0	40 00	34 00	38.50	36.0	39.50	35.00	40.00	40.00		10
D rdanelles	1	.1 ¾	. 3	11½	.14	.11¾	.15	.11¾	.13¾	.11	13¾	.10¾	.14¾	14,500
Deer Park	1	.02	.04	0a	04	.02	.04	.02¼	.04	.02	.04	02	.03	6,000
DeerT'lNo 2	1	.20¾	.22	.20	.22	.20	.23¾	.20¾	.23	.20¼	.24¾	.20	.23¾	1,000
Even'g Star	1	.08	11	.08¾	.10¾	08	.10¾	.08¾	.12	08¾	.10	.08	11	
Fairview C.	0.2	.05¾	.06¾	. 6	.07	.06¼	.07¾	05¾	.06¾	.05¾	.06¼	.05¾	.06¼	29,500
Insurgent	0.10			.03¾	.05	.03	.04¾	.03	.04¾	.03	.05	.03	06	1,500
Iron Mask	1	.71¾	.73	.70	.73	.70	.75	69	.73	.69	.72	70	.73	1,000
Monte Crist	1	.03	.05¼	.04	.07	.03¾	.07	.03¾	.08	.03¾	.07¾	.01¾	.05¾	5,200
Morrison	1	.11¾	.15	.11¾	.14	.11¾	.13	10¾	.15	.11	.15	.10	16	7,500
Noble Five.	1	.19	.23	.18	.22	.18	.23	.15	.20¾	.18	.21	.18	.22	1,000
No Belle	1	.01¾	.02¾	.01¾	.02¾	.01¾	.02¾	.61¾	.02¾	.01¾	02¼	.01¾	.02¼	3,500
Novelty	1	.02	.03¾	.02	03	.02¾	.03¾	02	.03¾	.02	.03¾	.02	.03	5,500
Rambler	1	.56	.61	.59¾	.63	.59	.62	.58	.62	.58	.62	.57	.61	
Rathmullen	1	.07¾	.18	.07¾	.18¾	08	.08¾	.08¾	.09¾	.08¾	.09	.08¾	.09	33,500
Republic	1	1.16	1.20	1 17	1.21	1 15	1.19	1.15	1.19	1 14	1.17	1.12	1.18	1,000
Van Anda	1	07¾	08	.07¾	.18¾	.07¾	.18¾	.07¾	.08¾	07¾	.08¾	.07¾	.08¾	47,500
Victory Tri.	1	.04	.07	.04	.07	.04¾	.07	.04	.06¾	.03¾	.06¾	.03¾	.05	16,500
Virtue	1	.45	.46	45	.50	.45	.48	45¾	49	45	.46	.44	.50	
Waterloo	0.10	.12	.12¾	.13¾	.15	.12¾	13¾	.18¾	14	.12¾	.14	.13	15	17,500
White Bear	1	.03¾	.04	.03¾	.04	.03¾	.04	.03¾	.04	.03¾	.05	.03¾	.06	47,000
Winnipeg	1	.30	.32	.30	.31¾	.30	.32	.29¾	.31¾	30	.32	.31	.33	2,500
Develop Co.														
B.C.G F'lds	1	.03	.04¾	.03	.01	.03	.08¾	03¼	.04¾	.03	.04	.03¼	04	
Can. G. F. S.	0.10	.07¾	08¾	.07¾	.08¾	.08	.08¾	.08	.08¾	.03	.07¾	.07¾	.08¾	68,100
Gold Hills	1	.03¾	.07	05	.06¾	.05	.07¾	.05¾	.08¼	.05¾	.06¾	.05¾	.06¾	15,500

*Official quotations of the Standard and Toronto Mining and Industrial Exchanges. Total shares sold, 332,360.

LONDON.

Nov. 3.

Name of Company.	Country.	Authorised capital.	Par value.	Last dividend. Amt	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields	Alaska	$300,000	1 0 0	2 1	Mar., 1899	15 0	17 6
Alaska-Mexican, g	"	200,000	1 0 0	0 4.8	Oct., 1899	17 6	1 2 6
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	Oct., "	5 0 0	5 5 0
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2½	Nov., 1899	9 10 0	9 12 6
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	11 3	13 9
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1899	4 6	5 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	1 0	1 3
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Aug., 1899	1 7 6	1 10 0
Hall Mines, c., s	British Col.	250,000	1 0 0	1 0	May, 1898	8 9	11 3
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	6 11 3	6 13 9
*Lillie, g	Colorado	250,000	1 0 0	2½	Nov., 1899	15	1 0 0
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 0	3 6
Mountain Copper	California	1,250,000	5 0 0	9 0	Sept., 1899	7 2 6	7 7 6
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	5 0	7 6
Palmarejo & Mexican, g., s	Mexico	800,000	1 0 0	.....	.....	2 0	3 0
Plumas Eureka, g	California	281,250	2 0 0	0 6	Oct., 1896	3 9	5 0
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	5 0	6 3
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "	2 6	3 9
Stratton's Independence	Colorado	1,100,000	1 0 0	2 0	Sept., 1899	2 11 3	2 13 9
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	0	Nov., 1899	3 9	7 6
Copiapo, c	Chile	200,000	2 0 0	6 0	July, 1897	3 12 6	3 17 6
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	2 1 3	2 3 9
St. John del Rey, g	Brazil	600,000	1 0 0	1 3	June, 1899	1 9 0	2 10 0
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	2 10 0	3 0 0
Tolima B., s., g	"	30,000	5 0 0	5 0	"	1 10 0	2 0 0
UtahCon., g(Highl'ndBoy)	Utah	300,000	1 0 0	rts.	Mar., 1898	7 0	7 10 0
Velvet, g	"	100,000	1 0 0	.....	.....	1 11 3	1 13 9
Ymir, g	"	200,000	1 0 0	1 0	Oct., 1899	1 5 0	1 7 6
British Am. Corp.	"	1,500,000	1 0 0	rts.	Dec., 1898	1 1 0	1 2 0
Linares, l	Spain	45,000	8 0 0	12 6	Oct., 1899	8 0 0	9 0 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	5 0	May, 1899	3 15 0	4 0 0
Rio Tinto, c	Spain	1,625,000	5 0 0	1 15	Nov., 1899	46 7 6	46 12 6
" pref.	" "	1,625,000	5 0 0	2 6	" 1899	5 17 6	6 2 6
Tharsis, c	"	1,250,000	2 0 0	11 0	May, 1898	8 5 0	8 15 0
Libiola, c	Italy	252,000	5 0 0	1 6	Sept., 1899	1 12 6	1 17 6
Assoc. Gold Mines	W. Australia	500,000	1 0 0	4 0	Oct., 1899	12 0 0	12 5 0
Broken Hill Prop., s	N.S.Wales	384,000	8 0 0	1 0	Oct., 1899	2 3 0	2 2 0
Great Boulder Prop.	W. Australia	1,750,000	2 0 0	6	Sept., 1899	1 17 6	1 18 6
Hannan's Brownhill, g	"	110,000	1 0 0	7 6	Nov., 1899	12 5 0	13 15 0
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Oct., 1899	16 12 6	16 17 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Feb., 1899	9 7 6	10 12 6
Lake View Consols, g	"	250,000	1 0 0	£1	Nov., 1899	21 7 6	21 12 6
Mt. Lyell M. & R., l., c	Tasmania	975,000	3 0 0	4 0	Oct., 1899	10 15 0	11 0 0
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Nov., 1899	5 3 9	5 6 3
Waihi, g	New Zealand	320,000	1 0 0	2 0	Oct., 1899	9 2 6	9 5 0
Westralia, l., Stk. & F	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	4 0	4 6
Champion Reef, g	Colar Fields	220,000	10 0	4 0	Sept., 1899	5 3 9	5 6 3
Mysore Gold, g	"	250,000	10 0	4 6	Nov., 1899	5 12 6	5 15 0
Nundydroog, g	"	242,000	1 0 0	2 0	" 1899	3 1 3	3 3 9
Ooregum, g	"	145,000	1 0 0	6	Aug., 1899	3 8 9	3 11 3
" pref. g	"	120,000	1 0 0	2 6	" 1899	4 8 9	4 11 3
Angelo, g	Transvaal	275,000	1 0 0	5 0	Mar., 1899	6 15 0	7 0 0
Bonanza, g	"	200,000	1 0 0	11 0	June, 1898	4 5 0	4 10 0
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 11 3	3 12 6
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1899	4 15 0	4 17 6
" pref	"	150,000	2 0 0	5 0	" 1899	4 12 6	4 17 6
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	5 7 6	5 12 6
Con Deep Level, g	"	200,000	1 0 0	2 xall.	June, 1898	1 12 6	1 17 6
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	14 15 0	15 5 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	21	June, 1899	25 15 0	26 17 6
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5	Oct., 1899	5 10 0	5 15 0
Ferreira, g	"	90,000	1 0 0	30 0	Aug., 1899	21 5 0	21 13 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	Aug., 1899	9 15 0	10 5 0
Geldenhuis Est., g	"	200,000	1 0 0	10 0	Aug., 1899	6 14	6 15 0
Glnsberg, g	"	100,000	1 0 0	5 0	Aug., 1899	3 0 0	3 5 0
Henry Nourse, g	"	125,000	1 0 0	10 0	Aug., 1899	3 0 0	8 5 0
Heriot (New), g	"	115,000	1 0 0	5 0	Sept., 1899	6 5 0	6 10 0
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	9 0	June, 1899	13 10 0	14 0 0
Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 16 3	1 18 9
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 0 0	6 11 0
Jumpers, g	"	100,000	1 0 0	4 0	Nov., 1899	5 2 6	5 7 6
Kleinfontein, g	"	275,000	1 0 0	2 0	Mar., 1899	2 13 9	2 16 3
Langlaagte Estate, g	"	500,000	1 0 0	3 0	Sept., 1899	3 6 3	3 8 9
May Con., g	"	275,000	1 0 0	6 0	Aug., 1899	4 10 0	4 15 0
Meyer & Charlton, g	"	85,000	1 0 0	8 0	July, 1899	5 5 0	5 10 0
Namaqua, c	Cape Colony	200,000	2 0 0	6 6	June, 1899	4 12 6	4 15 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Aug., 1899	4 3 9	4 5 0
Rand Mines, g	So. Africa	49,000	1 0 0	15 0	Aug., 1899	39 17 6	41 2 6
Robinson, g	Transvaal	2,750,000	5 0 0	8 0	Aug., 1899	8 17 6	9 2 6
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 2 6	1 5 0
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	5 17 6	6 2 6
Wemmer, g	"	90,000	1 0 0	15 0	June, 1899	12 0 0	13 10 0
Wolhuter, g	"	880,000	4 0 0	2 0	Feb., 1899	4 7 6	4 12 6
Worcester, g	"	100,000	1 0 0	1 0	Oct., 1899	2 10 0	2 15 0

*Ex-dividend. ‡ Dividend pending

PARIS.

Oct. 26.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Aciaries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	1,980.0	1,964.0
" " Firminy	" "	" "	3,000,000	500	125.00	3,850 00	3,820.00
" " Fives-Lille	" "	" "	12,000,000	500	35.00	561.00	561 00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,545.00	4,545 00
" " la Marine	France	Steel mfrs.	20,000,000	500	50.00	1,767.50	1,770.00
" " Longwy	" "	" "	.....	500	35.00	1,270.0	1,270.00
Anzin	"	Coal	.....	.....	.....	220.00	6,850.00
Blache-St. Vaast	"	Steel	.....	1,000	160.0	3,800.00	3,800.00
Boleo	Lower Cal.	Copper	.....	500	1.00	2,950.00	2,915.00
Briansk	Russia	Coal & Iron	.....	500	.....	1,252.50	1,250.00
Bruay	France	Coal	3,000,000	400	1,000.00	50,900.00	51,0.0.00
Cape Copper	S. Africa	Copper	15,000,000	50	1.50	128 25	120.50
Champ d'Or	"	Gold	8,375,000	25	3.75	40 00	41.00
Courrieres	France	Coal	600,000	200	70.00	2,795.00	2,795.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	659.00	682.00
Denain-Anzin	France	Steel	.....	500	25.00	1,275.00	1,250.00
Dombrowa	Russia	Coal	.....	500	12.50	1,02.00	1,120 00
Donets	"	Steel	.....	.....	.....	1,196.0	1,233.00
Dourges	"	Coal	.....	1,000	400.00	29,200.00	29,0.0.00
Dynamite Centrale	France	Explosives	.....	500	12.50	470.00	470.00
Epinac	"	Coal	.....	2,500	31.25	600.00	600.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,176.00	1,161.0
Fraser River	Brit. Col'mb	Gold	250,000	25	.....	7 00	6 50
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	54.25	56.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	88.00	89.00
Lagunas	Chile	Nitrates	16,250,000	125	12.50	31.00	31.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	6?0.00	695 00
Lautaro	Chile	Nitrates	13,750,000	125	.....	105.00	1?0.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	1,375 00	1,360 00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	30.00	550.00	530.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,249 00	1,255 00
Naphte Baku	Russia	Petroleum	.....	.....	.....	784.00	778.00
Naphte, Le	"	"	.....	.....	.....	1,300.00	1,3 0.00
Naphte Nobel	"	"	.....	.....	.....	640.00	660.00
" " parts	"	"	.....	.....	.....	13,?70.00	13,150.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	30.00	356 00	297.50
Penarroya	Spain	Coal, etc.	.....	500	65.00	2,679 00	2,675.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	4.50	4.50
Rio Tinto	Spain	Copper	40,625,000	125	61.75	1,239 00	1,223.00
" " preferred	"	"	40,625,000	125	.....	153.00	153.00
Rive-de-Gier	France	Coal	.....	.....	.....	21.50	22.25
Robinson	S. Africa	Gold	68,?50,000	125	12.50	220.00	240.00
St. Etienne	France	Coal	.....	.....	18.00	465.00	483. 0
Salines de l'Est	France	Salt	.....	500	11.50	250.00	231.00
Salines du Midi	France	" etc	.....	500	25.00	670.00	675 00
Sels Gem. de la Rus. Mer	Russia	" etc	.....	500	25.00	565.00	588 00
Tharsis	Spain	Copper	33,?50,000	50	12.50	221.00	215.00
Vicoigne-Neux	France	Coal	.....	1,000	?80.00	27,200.00	27,200.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	30.00	805.00	810.00

STOCK QUOTATIONS.

MEXICO.

Nov. 3.

Name of Company.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.
Chihuahua:				
Gloria	1,500	.....	$50	$50
Durango:				
Barradon y Cab	2,400	.....	40	40
Candelaria de Pan.	1,200	.....	20	20
Capuzaya	2,400	.....	30	30
Penoles	2,500	80.00	2,000	2,000
Restauradora	10,000	.....	20	20
Rosario y Anexas	4,800	.....	10	10
Guanajuato:				
Angustias	2,400	5.00	290	275
Cinco Senores y An	2,000	15.00	320	320
El Oro	500	.....	30	30
do. pref.	2,000	.....	30	30
Guadalupe Hacie'a	10,000	3.00	240	27
Trinidad, aviador	2,000	.....	35	30
do. aviada	400	.....	30	25
Zona Minera de Paz	2,400	.....	35	30
Hidalgo:				
Amistad y Concord.	9,600	1.47	29	28
Arevalo	720	.....	200	200
Bartolome de Med.	2,000	3.00	68	64
Carmen	1,100	7.75	350	300
Luz de Maravillas	800	.....	150	120
Pabellon	800	27.89	30	20
Hidalgo:				
Real del Monte	2,554	10.00	530	550
San Francisco He	6,000	3.00	215	220
San Rafael y An.	1,200	12.00	1,100	1,020
do. aviado	1,200	6.00	400	410
do. del Oro	3,000	5.00	20	20
Soledad	960	5.00	300	330
Sorpresa	960	7.50	240	260
Union Hacienda	2,000	5.00	350	340
Mexico:				
Coronas	800	.....	75	75
Esperanza y An	8,000	10.00	1,575	1,600
Michoacan				
Luz de Borda ava	4,000	.....	30	22
Pueblo:				
Tlaxingo	2,400	.....	27	28
S. Luis Potosi:				
Concep. y An	2,400	.....	215	255
Sta. Mariadela Paz	2,400	10.00	720	840
Zacatecas:				
Asturiana y An	2,500	10.00	310	330
Cabeson	2,400	.....	15	15
C'delar. de Finos	2,500	.....	180	160
Palma de Somb	2,400	.....	100	80

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

ROSSLAND, BRITISH COLUMBIA.*

Nov. 9.

Name of Company.	No. of shares.	Par value.	Selling price.
Brandon & Gold. Cr.	1,500,000	$1	$0 30
Brit. Amer. Corp'at'n	7,500,000	5	5.25
Brit.Col. Dev. Co	1,500,000	2½	5.25
Canadian Gold Fields	10,000,000	0.10	.10
Cariboo	1,500,000	1	1.20
Commander	500,000	1	.....
Deer Park	1,000,000	1	.....
Dundee	1,000,000	1	.10
Evening Star	1,000,000	1	.12
Fern	200,000	¼	.....
Gold Fields of B.C.	3,000,000	3½	.....
Hall Mines	250,000	5	.....
Hattie Brown	1,000,000	1	.....
Homestake	1,000,000	1	.....
Iron Colt	1,000,000	1	.....
Iron Horse	1,000,000	1	.....
Iron Mask	500,000	1	.75
Josie	700,000	1	.....
Jumbo	500,000	1	.....
Kenneth	1,000,000	1	.....
Keystone	1,500,000	1	.....
KootenayGold Fields	30,000		
Lerwick	500,000	$1	$0.15
Lily May	1,000,000	1	1c
Lon.&Van.Fin.Dev.Co	500,000	5	.....
London B. C. Gold F.	250,000	5	6.00
Monte Cristo	1,000,000	1	.....
New Gold Fields, B.C.	250,000	1	.....
Novelty	1,000,000	1	.....
Queen Bess Prop.	1,500,000	5	5.75
Rambler Con.	1,000,000	1	.60
Reco	1,300,000	1	.....
Red Mt.View	1,000,000	1	.....
St. Elmo	1,000,000	1	.05
St. Paul	1,000,000	1	.....
Sarah Lee	1,000,000	1	.....
Silver Queen	1,500,000	1	.15
Slocan Star	500,000	1	1.20
Vic Tr MinesDev. Co.	25,000	5	.....
Virginia	500,000	1	.07
War Eagle Con	2,000,000	1	3.00
Waverly Mines	100,000	5	.....
White Bear	3,000,000	1	.10
Wild Horse	400,000	1	.....

*ON Our Special Correspondent.

MEETINGS.

Name of Company.	Location.	Meeting.	Date.	Place of Meeting.
Ely	Utah	Annual.	Nov 2.	50 Main st. Salt Lake City.
Enterprise	Colorado	"	Nov. 21.	43 Montgomery st., Jersey City, N. J.
Mammoth No 2	Utah	Special.	Nov. 21	Mammoth, Utah.
Mason	Michigan.	"	Nov. 29.	6 State st Boston, Mass
N.Y. & Rond Ros.	Mexico.	Annual.	Dec. 14.	45 Broadway New York City.
Occidental Con	Nevada	"	Nov 20.	309 Montgomery st, San Francisco, Cal.
Old Bonanza	California	"	Dec. 6.	64 Crocker Bldg. San Francisco, Cal
White Rock	Utah	Special.	Nov.	Rm. 4?, D. F Walker Bldg.Salt Lake City.

ASSESSMENTS.

Name of Company.	Location.	No.	Dlq.	Sale.	Amt.	Office.
Bingham Placer.	Utah	1	Oct. 16	Nov. 18	.10	201 McCornick Block, Salt Lake City
California Borax	Cal.	1	30	Nov. 28	2.00	310 Pine st. San Francisco, Cal.
Sunbeam Con.	Utah	24	5	Nov. 21	.10	419 Dooly Block, Salt Lake City.
Aetna	Id'ho	...	Nov. 6	Nov. 27	.00½	Salt Lake City, Utah.
Alta	Nev.	49	28	.....	.05	309 Montgomery st., San Francisco.
Andes	Nev.	49	6	Nov. 27	.05	309 Montgomery st., San Francisco.
Blue Bird	Utah	1	19	Dec. 9	.00½	Walker Bank Bldg., Salt Lake City.
Christmas	Utah	1	24	Dec. 9	.01½	501 W.First South st.,Salt LakeCity.
Confidence	Nev.	33	23	Dec. 14	.15	414 California st., San Francisco.
Con. Imperial	Nev.	43	14	Dec. 5	.01	Mills Bldg., San Francisco, Cal.
Con. Oil & Dev.	Cal.	1	16	Dec. 2	.10	503 California st., San Francisco.
Crown Point	Nev.	77	23	Dec. 14	.10	Mills Bldg., San Francisco, Cal.
Golden Channel	Cal.	...	20	.....	.01½	.....
Hale & Norcross	Nev.	3	7	Nov. 28	.10	331 Pine st., San Francisco.
Hillside	Utah	1	24	Dec. 15	.01½	R'm 1 Masonic Bl'k, Salt Lake City.
Homestake	Utah	...	9	Nov. 28	.00½	163 S. Main st., Salt Lake City.
Inyo Marble	Cal	33	6	Dec. 6	.05	Mills B dg., San Francisco, Cal.
Justice	Nev.	66	22	Dec. 14	.05	309 Montgomery st . San Francisco.
Lady Wash.Con.	Nev.	12	16	Dec. 7	.05	309 Montgomery st., San Francisco.
Little Chief	Utah	2	25	Dec. 13	.01	161 So. Main st., Salt Lake City.
Lucky Bill	Utah	...	29	Dec. 19	.02	R'm 152, C. & C. Bldg, Salt Lake City
Mariposa Com'l.	Cal	13	8	Dec. 5	10 00	320 Sansome st., San Francisco. Cal.
Mexican	Nev.	62	13	Dec. 4	.15	309 Montgomery st , San Francisco.
Molly Bawn	Utah	1	29	Dec. 18	01	522 Dooly Bldg., Salt Lake City.
National Con	Cal.	9	27	Dec. 21	.10	773 Mission st., San Francisco, Cal.
New Klondike	Utah	3	27	Dec. 18	.01	Walker Bldg., Salt Lake City.
Ophir	Nev.	76	14	Dec. 4	.20	309 Montgomery st., San Francisco.
Osceola Con	Cal.	8	11	Dec. 6	.01	307 Montgomery st., San Francisco.
Revenue	Utah	2	6	Dec. 11	.02	419 Dooly Block, Salt Lake City.
S. Belch. & Mid.	Nev.	24	2	Nov. 22	.05	309 Montgomery st., San Francisco.
Sacramento Con.	Utah	1	18	Dec. 18	.00⅛	Walker Bank Bldg, Salt Lake City.
Spanish Con.	Cal	...	20	.....	.05	.....
Tetro	Utah	10	18	Dec. 9	.01	617 McCornick Block,Salt Lake City.
Alliance	Utah	22	Dec. 1	Dec. 22	.10	McCornick's Bank, Salt Lake City.
Brunswick Con.	Cal.	13	19	Jan. 17	.03	309 Montgomery st., San Francisco.
Joe Bowers Ext	Utah	4	10	Dec. 30	.01	Walker Bldg., Salt Lake City.
Lulah Con.	Utah	2	5	Dec. 20	.00½	150 Main st., Salt Lake City.
Martin White	Nev.	...	4	....	1.50	.....
Sierra Nevada	Nev.	117	7	Dec. 26	.15	309 Montgomery st., San Francisco.

DIVIDENDS.

Name of Co.	Date.	Am't.	Paid 1899.	Grand Total.
Alamo, Utah	.....	.....	$2,500	$2,500
Alaska-Mexican	.....	.....	72,000	429,031
Alaska-Treadwell	.....	.....	300,000	4,220,000
Ætna Con.	.....	.....	45,000	195,000
AmalgamatedCop.	.....	.....	1,500,000	1,500,000
American Gold	.....	.....	48,000	434,000
Am. Sm &Ref.pref	.....	.....	568,750	568,750
American Zn. Mg	Nov 11	$5,000	15,000	15,000
Am Zinc-L. & Sm.	...	...	40,000	40,000
Arapaconda Copper	Nov. 1	2,400,000	3,960,000	12,150,000
Anchoria-Leland	.....	.....	72,000	234,000
Apollo Con., Alas	.....	.....	40,000	140,000
April Fool, Nev	.....	.....	16,000	16,000
Argonaut, Cal.	Nov 25	20,000	220,000	400,000
Associated, Colo	.....	.....	12,000	84,000
Aurora Iron	.....	.....	50,000	800,000
Bald. Butte	Nov 11	15,000	127,500	777,141
Bonanza, Wash	.....	.....	5,000	5,000
Bonanza Dev., N.M	.....	.....	1,050,000	1,500,000
Boston-Aurora	Nov 25	5,328	26,640	26,640
Boston & Colo.Sm.	.....	.....	45,000	.....
Boston-Duenweg,z	Nov. 6	4,000	28,000	28,000
Boston-Little C Zn	Nov. 1	10,000	70,000	70,000
Boston Provid'nce	Nov. 2	750	10,500	10,500
Boston Quick, Cal.	.....	.....	10,000	10,000
Boston & Cal.	.....	.....	72 000	72,000
Boston & Mont.	Nov20	2,225,000	5,375,000	14,500,000
Breece	Dec 1	10,000	40,000	70,000
Bul.Bec.&Champ.	Nov 15	10,000	110 000	2,428,400
Bunker Hill & S.	Nov. 4	21,000	147,000	747,000
Calumet & Hecla	...	.....	8,000,000	64,850 000
Carib'o-McK..B.C.	.....	.....	72,000	311,965
Centenn'l Eureka	.....	.....	120,000	2,150,000
Central Lead	Nov 15	5,000	55,000	137,000
Champion, Cal	Nov. 1	8,500	17,000	313,200
Charleston, S. C.	.....	.....	20,000	200,000
Colorado Sm.	.....	.....	140,080	1,945,000
Colonial Lead,Mo.	.....	.....	10,000	10,000
Com'wealthZ.,pref	Nov .1	10,000	10 000	10,000
Consolidation Coal	.....	.....	205,000	5,716,650
Daly-West, Utah	Nov 25	30,000	60,000	60,000
Delta L. & Z., Mo	Nov. 1	820	3,280	3,280
D'rTr'l No 2 Wash	Nov 25	2,500	27,500	45,000
Doe Run, Mo.	Nov 15	2,500	27,500	87,500
De Lamar, Idaho	.....	.....	48,000	2,346,000
El Dorado, Cal	.....	.....	10,000	10,000
Elkton, Colo.	.....	.....	37,500	694,461
Empire State, Ida.	Nov 15	29,554	226,581	293,483
Fanny Rawlings	.....	.....	20,000	20,000
Ferris-H g'ty, Wyo	.....	.....	5,000	5,000
Garfield Con.	.....	.....	12,000	34,000
Gold Coin, Vict.	Nov 25	10,000	110,000	260,000
Golden Cycle	Nov 18	10,000	95,000	248,500
Golden Eagle, Col.	.....	.....	5,000	5,000
Gold King, Col.	.....	.....	90,000	90,000
Golden M. & Ex.	.....	.....	10,000	10,000
Golden Star	.....	.....	41,000	41,000
Grafton, Colo	Nov. 1	10,000	10,000	10,000
Grand Central, Ut.	.....	.....	347,500	666.250
Grass Valley Ex.	.....	.....	30 000	30,000
Gwin, Cal	Nov 12	5,000	45,000	96.500
Helena—Frisco	.....	.....	110,000	885.000
Hidden Treas., Cal.	.....	.....	3,600	3,600
Holy Terror	Nov 18	5,000	45,000	162,000
Homestake	Nov 25	$105,000	$857,500	$8,038,750
Horn Silver	.....	.....	20.000	5,250,000
Idaho, B. Col.	.....	.....	28,000	292,000
Isabella	.....	.....	202,500	472,500
Jack Pot	.....	.....	75,000	75,000
Jamison, Cal.	.....	.....	11,700	50,700
Lake Superior Ir.	.....	.....	84,000	227,860
Last Chance, B. C.	.....	.....	25,000	45,000
Last Dollar, Colo.	Nov. 1	20,000	20,000	20,000
Le Roi, B. Col.	Nov. 7	240,000	240,000	1,305,000
Lillie	Nov. 1	11,250	123,750	290,360
Little Tiger, Cal.	Nov 15	7,500	25,000	25,000
Mammoth	Nov. 4	40,000	260,000	1,610,030
Marion Con., Colo	.....	.....	5,000	300,000
M'y McKinney,Col	Nov. 1	30,000	30,000	30,000
Mead, Cal.	.....	.....	40,000	120,000
Mercur	.....	.....	100,000	1,341,000
Mo.Zinc Fields,pfd	Nov 11	2,664	18,648	18,648
Modoc	Nov 15	5,000	30,000	130,000
Montana, Ltd.	.....	.....	28,855	453,700
Mont. Ore Pur	.....	.....	560,000	1,360,000
Moon-Anchor,Colo	Nov. 1	45,000	45,000	306,000
Morning Star, Cal.	.....	.....	63,20	751,800
Moulton, Mont	.....	.....	40,000	500,000
Mountain Copper.	.....	.....	1,080,000	1,173,750
Mt. Shasta, Cal.	.....	.....	6,000	6,000
Napa Con.	.....	.....	90,000	1,040,000
New Idria	.....	.....	90,000	170,000
New York Zinc.	Nov. 2	7,000	14,000	14,000
N.Y.& H.-Rosario.	Nov 20	15,000	150,000	1,145,000
North Star, Cal.	Nov 20	50,000	50,000	50,000
Olive	.....	.....	12,000	12,000
Okanogan, Wash.	.....	.....	3,125	3,125
Orig. Empire, Cal.	.....	.....	100,000	550,000
Osceola	Dec.15	279.000	558,000	3,080,500
Parrot	.....	.....	897,000	3,035,898
Pennsylvania, Cal	Nov. 8	10,300	57,950	126,175
PennsylvaniaCoal	.....	.....	890,000	4,050.000
Petro, Utah	.....	.....	15,000	28,000
Pioneer, Cal.	.....	.....	12,500	62,500
Portland	.....	.....	540,000	2,377,080
Queen Bess Propr.	.....	.....	25,000	25,000
Quicksilver (Pref.)	.....	.....	21,500	1,845,411
Quincy	.....	.....	950,000	11,070,000
Rambler-Cariboo	.....	.....	10,000	50,000
Raven, Colo	Nov 20	10,000	20,000	49,500
Republic, Wash.	.....	.....	157,500	323,000
Royal, B. C.	.....	.....	50.000	1,050,000
Sacramento	.....	.....	50,000	138,000
St. Joseph Lead	.....	.....	112,500	2,897,000
Santa Rosalia, Cal.	.....	.....	5,000	130,000
Silver King.	Nov 10	50,000	525,000	2,350,000
Small Hopes	.....	.....	25,000	3,325,000
Smuggler	Nov 15	10,000	115,000	1,210.000
South Swansea	Nov. 6	7,500	45,000	157,500
Squaw Mountain	Nov. 1	10,000	10,000	10,000
Standard, Cal.	Nov 22	20,000	62,000	3,899,226
Standard, Ida.	...	.....	30.000	1,745,000
Stratton's Inde'ce	.....	.....	488,000	488,000
Swansea	Nov 10	5,000	55,000	246,000
Tamarack	.....	.....	240,000	5,910,000
Tomboy	.....	.....	80,000	730,000
United Z.&L.,pfd.	.....	.....	40,000	40.000
Utah, Utah	.....	.....	2,000	179.000
Vindicator	.....	.....	.....	$177.625	304,500
War Eagle, B. C.	Nov 15	$26,250	288,750	466,500
Weath. Bonanza	.....	.....	1,562	1,562
Wolverine	.....	.....	210,000	270,000
Yellow Aster	Nov. 9	10,000	105,000	273,789
Grand Total	.....	.....	$5,733,441	$35,379,926	212,369,685

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Ætna Cons., q	Cal	$500,000	100,000	$5	$195,000	Oct.	1899	.10
2	Alaska-Mexican, g	Alask	1,000,000	200,000	5	429,031	Oct.	1899	.10
3	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	4,220,000	Oct.	1899	.37½
4	Alice, g. s.	Mont.	10,000,000	400,000	25	1,075,000	April.	1898	.05
5	Amalgamated, c.	Mont.	75,000,000	750,000	100	1,500,000	Oct.	1899	2.00
6	American Gold, g. s. c. l.	Colo.	3,000,000	300,000	10	434,000	June.	1899	.09
7	Amer. Sm. & Ref., pref.	U. S.	32,500,000	32,500	100	568,750	Oct.	1899	1.75
8	Am. Zinc, Lead & Sm.	Mo	500,000	200,000	25	40,000	Oct.	1899	.10
9	Anaconda Copper	Mont.	30,000,000	1,200,000	25	12,150,000	Nov.	1899	2.00
10	Anchoria-Leland, g	Colo.	600,000	600,000	1	234,000	Oct.	1899	.03
11	Anglo-Mexican, g	Mex.	2,001,625	400,230	5	1,728,993	Dec.	1898	.24
12	Appie Ellen, g	Colo.	600,000	600,000	1	25,000	Aug.	1898	.01
13	April Fool	Nev.	500,000	500,000	1	16,000	Oct.	1899	.01
14	Argonaut	Cal.	2,000,000	200,000	10	380,000	Oct.	1899	.10
15	Associated, g	Colo.	1,250,000	1,250,000	1	84,000	Feb.	1899	.01
16	Atlantic, c.	Mich.	1,000,000	40,000	25	780,000	Feb.	1898	1.00
17	Aurora, l.	Mich.	2,500,000	100,000	25	890,000	June.	1899	.50
18	Bald Butte	Mont.	250,000	250,000	1	762,141	Oct.	1899	.06
19	Big Six, g. s.	Colo.	500,000	500,000	1	15,000	May.	1898	.00½
20	Bonanza	Wash	1,000,000	1,000,000	1	5,000	Sept.	1899	.00¼
21	Boston-Aurora, pref	Mo	800,000	32,000	25	21,312	Oct.	1899	.17
22	Boston & California	Cal	600,000	600,000	1	72,000	June.	1899	.06
23	Boston-Little Circle, z.	Mo-K.	1,000,000	100,000	10	60,000	Oct.	1899	.15
24	Boston & Mont. Con.	Mont.	3,750,000	150,000	25	14,500,000	Nov.	1899	15.00
25	Boston, q	Cal.	1,000,000	100,000	10	10,000	Oct.	1899	.10
26	Breece, l.	Colo.	5,000,000	200,000	25	60,000	Sept.	1899	.05
27	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	2,418,400	Oct.	1899	.10
28	Bunker Hill & Sullivan	Idaho	3,000,000	300,000	10	726,000	Oct.	1899	.07
29	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	64,850,000	Sept.	1899	20.00
30	Cariboo-McKinney, g.	B.Col	800,000	800,000	1	311,965	June.	1899	.01½
31	Centen'l-Eureka, g. s. l. c.	Utah.	5,000,000	200,000	25	2,150,000	Aug.	1899	.50
32	Central Lead, l.	Mo	1,000,000	10,000	100	132,000	Oct.	1899	.50
33	Champion, g. s.	Cal.	340,000	34,000	10	313,200	Oct.	1899	.25
34	Charleston, p. r.	S. C.	1,000,000	10,000	100	200,000	June.	1899	2.00
35	Commodore	Colo.	1,200,000	1,200,000	1	432,000	Jan.	1899	.04
36	Commonwealth, z., pref.	Mo	500,000	100,000	5	10,000	Nov.	1893	.01
37	Consolidation Coal	Md.	10,250,000	102,500	100	5,716,650	Feb.	1899	2.00
38	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	20,000	Dec.	1898	.02
39	Cresus, g	Cal.	1,000,000	200,000	5	30,000	Dec.	1898	.15
40	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10	222,000	Dec.	1898	.02
41	Daly	Utah.	3,000,000	150,000	20	2,925,000	Mar.	1897	.25
42	Daly West	Utah.	3,000,000	150,000	20	30,000	Oct.	1899	.20
43	Deadwood-Terra, g.	S. D.	5,000,000	200,000	25	1,350,000	May.	1898	.15
44	De Lamar, g. s.	Idaho	2,000,000	400,000	5	2,346,000	May	1899	.12
45	Della S., g.	Colo.	1,000,000	1,000,000	1	60,000	Jan.	1897	.01
46	Delta Lead & Zinc.	Mo.	100,000	100,000	1	2,460	Oct.	1899	.00¼
47	Deer Trail No. 2.	Wash	1,000,000	1,000,000	1	42,500	Oct.	1899	.00¼
48	Doe Run, l.	Mo	500,000	5,000	100	87,500	Oct.	1899	.50
49	Dutch, g.	Cal	1,500,000	150,000	10	39,000	Feb.	1898	.04½
50	Elkton Cons., g.	Colo.	1,250,000	1,250,000	1	694,461	Sept.	1899	.03
51	El Paso, g. s.	Colo.	650,000	650,000	1	12,393	Jan.	1898	.01
52	Empire State-Idaho	Idaho	1,000,000	100,000	10	258,929	Oct.	1899	.30
53	Enterprise, s. l.	Colo.	500,000	500,000	1	900,000	Sept.	1898	.05
54	Fanny Rawlings, g. s.	Colo.	1,000,000	1,000,000	1	20,000	Aug.	1899	.01
55	Fern, g.	B.Col	200,000	200,000	1	10,000	Jan.	1898	.05
56	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1	5,000	Mar.	1899	.00½
57	Florence, s.	Mont.	2,500,000	500,000	5	137,530	Aug.	1897	.01
58	Garfield Con., g.	Colo.	1,200,000	1,200,000	1	34,000	May.	1899	.01
59	Geyser-Marion, g.	Utah.	1,500,000	300,000	5	96,000	Sept.	1898	.02
60	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1	250,000	Oct.	1899	.01
61	Gold & Globe, g.	Colo	750,000	750,000	1	51,625	July.	1899	.00½
62	Gold King, g.	Colo.	1,000,000	1,000,000	1	90,000	Oct.	1899	.03
63	Golden Cycle, g.	Colo.	1,000,000	200,000	5	288,500	Oct.	1899	.05
64	Golden Eagle, g.	Colo.	500,000	500,000	1	5,000	July.	1899	.01
65	Golden Fleece, g. s.	Colo.	600,000	600,000	1	569,480	Feb.	1897	.01
66	Golden Reward, g	S. D.	1,000,000	100,000	10	155,000	Feb.	1898	.15
67	Golden Star, g.	B.Col	1,000,000	1,000,000	1	41,000	July.	1899	.01
68	Grafton, g.	Colo.	1,000,000	1,000,000	1	10,000	Nov.	1899	.01
69	Grand Central, g.	Utah.	250,000	250,000	1	666,250	Sept.	1899	.24
70	Grass Valley Expl	Cal.	100,000	30,000	2	30,000	Oct.	1899	.25
71	Gwin, g.	Cal.	1,000,000	20,000	50	91,500	Oct.	1899	.25
72	Hall Mines, Ltd.	B.Col	1,500,000	300,000	5	160,000	May.	1898	.25
73	Helena & Frisco, l. s	Idaho	2,500,000	500,000	5	675,000	Oct.	1899	.25
74	Holy Terror, g.	S. D.	500,000	500 000	1	142,000	July.	1899	.01
75	Homestake, g.	S. D.	21,000,000	210,000	100	7,933,750	Oct.	1899	.50
76	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	5,250,000	Mar.	1899	.05
77	Idaho, s. l.	B.Col	500,000	500,000	1	202,000	Jan.	1899	.05
78	Iowa, g.	Colo.	1,000,000	1,000,000	1	95,000	June.	1898	.00½
79	Iron Mountain, g. s. l. l.	Mont.	5,000,000	500,000	10	507,500	April.	1898	.02
80	Isabella, g.	Colo.	2,250,000	2,250,000	1	472,500	Sept.	1899	.01
81	Jack Pot, g.	Colo.	1,250,000	1,250,000	1	75,000	Sept.	1899	.04
82	Jamison	Cal	$3,900,000	390,000	$10	$50,700	April.	1899	.10
83	Lake Superior Iron	Mich.	2,100,000	84,000	25	736,000	Feb.	1899	1.00
84	Last Chance, s. l.	B.Col	500,000	500,000	1	45,000	Apr.	1899	.05
85	Last Dollar, g.	Colo.	1,500,000	1,500,000	1	20,000	Oct.	1899	.02
86	Le Roi, g.	B.Col	5,000,000	200,000	5	1,305,000	Nov.	1899	1.20
87	Lillie, g.	Colo.	1,250,000	250,000	5	301,610	Nov.	1899	.05
88	Little Tiger, g.	Colo.	500,000	500,000	1	17,500	Oct.	1899	.01½
89	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	1,610,000	Nov.	1899	.10
90	Marion Con.	Colo.	5,000,000	500,000	10	300,000	May.	1899	.01
91	Mary McKinney, g.	Colo.	1,000,000	1,000,000	1	30,000	Oct.	1899	.03
92	Matoa, g.	Colo.	1,000,000	1,000,000	1	25,000	Dec.	1898	.02½
93	Mead, g.	Cal.	200,000	200,000	1	120,000	June.	1899	.20
94	Mercur, g.	Utah.	5,000,000	200,000	25	1,341,000	Oct.	1899	.25
95	Minnesota Iron	Minn.	16,500,000	165,000	100	4,735,000	Oct.	1898	1.50
96	Missouri Zinc Fields, pf	Mo	400,000	16,000	25	15,984	Oct.	1899	.17
97	Modoc, g.	Colo.	500,000	500,000	1	175,000	Oct.	1899	.01
98	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	453,700	April.	1899	.12
99	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	1,360,000	Oct.	1899	1.00
100	Monument, g.	Colo.	300,000	300,000	1	12,624	Dec.	1898	.01
101	Moon-Anchor Con., g.	Colo.	1,750,000	600,000	1	306,000	Nov.	1899	.07½
102	Morning Star, g.	Cal.	240,000	2,400	100	751,890	Oct.	1899	3.00
103	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1	60,000	Jan.	1898	.02
104	Mt. Shasta	Cal.	100,000	20,000	5	6,000	May.	1899	.30
105	Moulton	Mont.	2,000,000	400,000	5	500,000	Oct.	1899	.05
106	Mountain Copper	Cal	6,250,000	250,000	25	1,173,750	Oct.	1899	2.16
107	Napa Cons., q.	Cal	700,000	100,000	7	1,040,000	Oct.	1899	.30
108	New Central Coal.	Md.	1,00,000	50,000	20	470,000	April.	1899	.40
109	New Idria, q.	Cal.	500,000	100,000	5	170,000	Oct.	1899	.30
110	New York Zinc	Mo	700,000	28,000	25	7,000	Oct.	1899	.25
111	N. Y. & Hon Rosario, s. g.	C. A.	1,500,000	150,000	10	1,125,000	Oct.	1899	.10
112	North Star, g.	Cal	5,000,000	500,000	10	550,000	April.	1899	.25
113	Nugget	Colo.	1,000,000	1,000,000	1	20,000	Aug.	1898	.00½
114	Okanogan, g.	Wash	62,500	1,250,000	05	3,125	Oct.	1899	.00¼
115	Ontario, s. l.	Utah.	1,500,000	150,000	100	13,557,500	Nov.	1897	.75
116	Orphan Bell, g.	Colo.	1,000,000	1,000,000	1	115,000	Mar.	1898	.08
117	Original Empire, g.	Cal.	5,000,000	50,000	100	500,000	May.	1899	1.00
118	Osceola, c.	Mich.	2,500,000	93,000	25	2,801,500	June.	1899	3.00
119	Parrot, c.	Mont.	2,300,000	230,000	10	3,035,898	Oct.	1899	1.50
120	Pennsylvania Coal.	Pa.	5,000,000	100,000	50	14,050,000	May.	1899	8.00
121	Pennsylvania Cons.	Cal.	5,150,000	51,500	100	115,875	Oct.	1899	.20
122	Petro, g.	Utah.	1,000,000	200,000	5	28,000	Oct.	1899	.02½
123	Pioneer, g.	Cal.	1,000,000	100,000	10	62,500	Mar.	1899	.12½
124	Portland, g.	Colo.	3,000,000	3,000,000	1	2,467,080	Oct.	1899	.02
125	Queen Bess Propr., s. l.	B.Col	500,000	100,000	5	25,000	July.	1899	.12½
126	Quicksilver, pref.	Cal.	4,300,000	43,000	100	1,845,411	May.	1899	.50
127	Quincy, c.	Mich	2,500,000	100,000	25	11,070,000	Aug.	1899	6.00
128	Rambler—Cariboo Con., s. l.	B.Col	1,000,000	1,000,000	1	50,000	April.	1899	.01
129	Raven, g.	Colo.	1,500,000	1,500,000	1	39,500	Oct.	1899	.00½
130	Reco, s. l.	B.Col	1,000,000	1,000,000	1	297,500	Jan.	1898	.10
131	Republic Cons., g.	Wash	3,500,000	3,150,000	1	323,000	Sept.	1899	.01
132	Royal Con.	B.Col	2,500,000	2,500,000	1	1,050,000	June.	1899	.01
133	Sacramento, g.	Utah.	5,000,000	1,000,000	5	138,000	Oct.	1899	.00½
134	St. Joseph, l.	Mo.	3,000,000	300,000	10	2,897,000	Sept.	1899	.50
135	Seventy-Six, g. s.	Colo.	1,000,000	200,000	5	2,950	Mar.	1898	.02
136	Santa Rosalia, g. s.	Cal.	100,000	100,000	1	130,000	Oct.	1899	.05
137	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	2,300,000	Oct.	1899	.34
138	Small Hopes, s.	Colo.	5,000,000	250,000	20	3,325,000	Feb.	1899	.10
139	Smuggler, s. l. z.	Colo.	1,000,000	1,000,000	1	1,195,000	Oct.	1899	.01
140	South Swansea, s. l.	Utah.	150,000	150,000	1	158,000	Oct.	1899	.05
141	Squaw Mountain, g.	Colo.	2,000,000	2,000,000	1	10,000	Nov.	1899	.00½
142	Standard Cons., g. s.	Cal.	2,000,000	200,000	10	3,879,236	Aug.	1899	.10
143	Standard	Idaho	500,000	500,000	1	1,745,000	April.	1899	.06
144	Stratton's Independ'ce	Colo.	5,500,000	1,100,000	5	480,000	Sept.	1899	.48
145	Swansea, s. l.	Utah.	500,000	100,000	5	241,000	Oct.	1899	.05
146	Tamarack, c.	Mich.	1,500,000	60,000	25	5,910,000	June.	1899	4.00
147	Tomboy, g.	Colo.	1,500,000	300,000	5	730,000	May.	1899	4.00
148	United, z. l., pref.	Mo	1,000,000	40,000	25	20,000	July.	1899	.50
149	Utah	Utah.	1,000,000	100,000	10	179,000	Jan.	1899	.02
150	Victor, g.	Colo.	1,000,000	200,000	5	1,155,000	Dec.	1898	.50
151	Vindicator, Cons., g.	Colo.	1,500,000	1,015,000	1	304,500	Oct.	1899	.05
152	War Eagle, Cons.	B. C.	2,000,000	1,750,000	1	440,250	Oct.	1899	.01½
153	Western Mine Enterprise	Mont.	500,000	120,000	1	48,680	Jan.	1898	.20
154	Wolverine, c.	Mich.	1,500,000	60,000	25	270,000	Oct.	1899	1.50
155	Yellow Aster, g.	Cal.	1,000,000	100,000	10	263,789	Oct.	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Alaska	Utah.	$1,000,000	1,000,000	$1	$50,000	Sept.	1899	.01½
2	Arnold, c.	Mich.	1,500,000	60,000	25	180,000	Jan.	1899	3.00
3	Best & Belcher, g. s.	Nev.	302,400	100,800	3	2,631,403	Oct.	1899	.20
4	Bingham Placer	Utah.	275,000	275,000	1	27,500	Sept.	1899	.10
5	Boston & Cp. Ck., g.	Colo.	400,000	200,000	2	20,000	Aug.	1898	.10
6	California Borax	Cal.	200,000	2,000	100	4,000	Oct.	1899	2.00
7	Centennial, c.	Mich.	2,500,000	100,000	25	460,000	Mar.	1898	3.00
8	Central Eureka, g.	Cal.	4,000,000	400,000	10	135,942	Sept.	1899	.03
9	CholIar, g. s.	Nev.	336,000	112,000	3	2,975,600	Aug.	1899	.15
10	Con. Cal. & Va.	Nev.	540,000	216,000	2½	786,000	Oct.	1899	.25
11	Cons. Imperial, g. s.	Nev.	500,000	500,000	1	2,256,000	Nov.	1899	.01
12	Crown Point, g. s.	Nev.	300,000	100,000	3	2,990,000	Nov.	1899	.10
13	Dalton, s. l.	Utah.	2,500,000	500,000	5	58,750	April.	1899	.01
14	Dexter	Nev.	1,000,000	200,000	5	38,000	Apr.	1898	.15
15	Diamond Con.	Utah.	1,000,000	200,000	5	8,000	Mar.	1899	.04
16	Eureka Con. Drift, g.	Cal.	500,000	500,000	1	183,000	Nov.	1899	.00½
17	Galena	Utah.	1,000,000	100,000	10	10,000	Oct.	1898	.10
18	Geyser, s. l.	Colo.	5,000,000	500,000	10	1,225,000	July.	1899	.10
19	Gold Coin	Colo.	1,000,000	200,000	5	10,000	Mar.	1899	.05
20	Gould & Curry	Nev.	324,000	108,000	5	4,646,050	Oct.	1899	.15
21	Granite Hill, g. s.	Cal.	500,000	100,000	5	124,000	June.	1899	.03
22	Great Western, q.	Cal.	5,000,000	50,000	100	75,520	May.	1899	.15
23	Hale & Norcross, g. s.	Nev.	336,000	112,000	3	39,200	Nov.	1899	.10
24	Head Center Con., s. g.	Ariz.	5,000,000	200,000	25	25,125	Mar.	1899	.20
25	Horse Shoe Bar Cons.	Cal.	6,000,000	60,000	100	85,800	Jan.	1899	.05
26	Little Pittsburg	Utah.	2,000,000	400,000	5	21,000	June.	1899	.00¼
27	Lower Mammoth	Utah.	150,000	150,000	1	22,500	June.	1899	.05
28	Lucky Bill	Utah.	300,000	120,000	2½	58,800	Nov.	1899	.02
29	Marguerite, g.	Cal.	$500,000	50,000	$10	$85,000	Aug.	1899	.10
30	Marina Marsicano, g.	Cal.	1,000,000	100,000	10	54,360	Oct.	1899	.05
31	Mayday, g. s.	Cal	50,000	50,000	1	10,000	July.	1899	.10
32	Mayflower, g.	Cal.	1,200,000	60,000	20	6,000	Sept.	1898	.05
33	Meteor, s. l.	Utah.	600,000	300,000	2	9,734	Sept.	1899	.01
34	Mexican, g. s.	Nev.	302,400	100,800	3	2,283,920	Nov.	1899	.15
35	Montreal	Utah.	2,500,000	250,000	10	30,625	April.	1899	.05
36	Northern Light, g.	Utah.	2,000,000	400,000	5	80,000	July.	1898	.10
37	Ophir, g. s.	Nev.	302,400	100,800	3	4,652,968	Nov.	1899	.20
38	Osceola, g.	Cal	10,000,000	100,000	100	11,924	Oct.	1899	.01
39	Potosi, g. s.	Nev.	336,000	112,000	3	2,185,200	Sept.	1899	.15
40	Powning	Cal.	750,000	75,000	10	2,800	Aug.	1899	.01
41	Rescue, g.	Nev.	100,000	10,000	10	5,500	Feb.	1899	.05
42	Reward, g.	Cal.	64,000	64,000	1	65,280	Nov.	1899	.02½
43	Revenue	Utah.	150,000	150,000	1	4,500	Nov.	1899	.02
44	Salmon River, c. s. g.	Nev.	57,000	57,000	1	11,970	Sept.	1899	.02½
45	Savage, g. s.	Nev.	280,000	112,000	2½	7,309,800	Sept.	1899	.10
46	Shower Con.	Utah.	2,000,000	400,000	5	8,000	Aug.	1899	.02
47	Sierra-Nevada, g. s.	Nev.	300,000	100,000	3	6,741,910	Aug.	1899	.15
48	Silver King, s.	Ariz.	10,000,000	100,000	100	490,000	Aug.	1899	.25
49	Snow Flake	Utah.	500,000	100,000	5	51,000	July.	1899	.02
50	Sunbeam Cons.	Utah.	250,000	250,000	1	73,125	Oct.	1899	.10
51	Tetro	Utah.	300,000	300,000	1	33,000	Nov.	1899	.01
52	Union Cons., g. s.	Nev.	250,000	100,000	2½	2,660,000	Sept.	1899	.15
53	Utah Cons., s.	Nev.	100,000	100,000	1	485,000	Sept.	1899	.05
54	Valeo	Utah.	200,000	200,000	1	10,000	May.	1899	.05
55	Watt Blue Gravel, g.	Cal.	1,100,000	100,000	10	58,000	May.	1899	.03
56	Yellow Jacket, g. s.	Nev.	360,000	120,000	3	5,306,000	April.	1899	.15

G., Gold. S., Silver. L., Lead. C., Copper. Z., Zinc. This table is corrected up to Nov. 1. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b.		
Niagara Falls grains	lb.	$0.10
Powd., F. FF. FFF	"	.08
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	26.00
Pumice Stone, Am. powd.	lb.	.01½@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.14
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	20.00
Acids—Acetic, 30% pure	100 lbs.	2.75@4.00
30% ch. pure	"	6.00@8.00
80% pure	"	7.50@9.50
Benzoic, English	oz.	.09@.09½
German	lb.	.46@.47
Boracic, pure cryst	"	.11
Powdered	"	.11½@.11¾
Carbolic, cryst. in drums	"	.16
Carbonic, liquid	"	.15
Chromic, crude	"	.23
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure	"	.08
Hydrofluoric, 30%	"	.03@.04½
48%	"	.05@.06
Best	"	.25
Nitric, chem. pure	"	.10
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Tartaric, cryst	"	.32
Powder	"	.32½
Alcohol—Grain	gal.	2.42@2.44
Refined wood, 95@97%	"	.80@.85
Purified	"	1.20@1.55
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Chrome, com'l	"	3.50
Aluminum—		
Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	.02
Com'l	"	1.50
Ammonia—Aqua, 16°	"	.04
18°	"	.04½@.05½
20°	"	.05@.06
26°	"	.07@.08
Ammonium—Bromide, p'r	"	.52@.53
Carbonate lumps	"	.08¼@.08¾
Powdered	"	.09¼@.09¾
Muriate, gran., white	"	.06¾
Gran. ch. p	"	.09½
Lump	"	.09½
Gray	"	.06¼
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.12@.15
Chem. pure	"	.60
Antimony—Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.10½
Com'l gray	"	.07@.08
Sulphuret, com'l	"	.16
Arsenic—White	"	.04½@.05¼
Red	"	.07¾@.08½
Asphaltum—		
Ventura, Cal	sh ton	32.00
Cuban, refined	lb.	.04½
Common	"	.02
Egyptian, refined	"	.06½
Trinidad, refined	"	.01½
San Valentino	lg. ton	15.00
Gilsonite, Utah, ordinary	lb.	.03¼
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	"	.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.05¾
Oxide, com'l, hyd. cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	18.00@20.00
Floated	"	19.00@20.00
Bauxite—Ga. & Ala. f.o.b. cars, first grade	lg. ton	5.00
Second grade	"	3.75
Benzole—90%	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb	2.25@2.56
Subnitrate cryst	oz.	.09@.10
Bitumen, "B"	lb.	.03½
"A"	"	.05
Bone Ash	"	03¼@.03½
Borax—Cryst. and pow'd	"	.07@.07¼
Calcined	"	.22
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.50@2.00
Sulphide	"	2.00@3.00
Sulphate	"	2.00@2.50
Carbide, in ton lots, f. o. b. Niagara Falls, N.Y.	lb.	.03@.04
Calcium—	Cust. Meas.	Price.
Acetate, pure white	100 lbs.	$1.00
Gray	"	1.35@1.40
Brown	"	.90@.95
Carbonate, ppt	lb.	.05
Chloride, com'l	100 lbs.	.95
Best	"	1.90
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs	bbl.	1.50@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs	"	.90
Sand cement, 400 lbs	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.14
White	"	.13
Chalk—Lump, bulk	sh. ton	2.15@2.25
Precipitated	lb.	.04@.04½
French	100 lbs.	.30@.35
Chlorine—Liquid	lb.	.30
Water	"	.15
Chrome Ore—		
(50% chrome) ex-ship	lg. ton	20.00@21.00
Sand	"	35.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	7.70
Am. best, ex-dock, N. Y.	"	8.70
English, common	"	11.00
Best grade	"	16.00
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	2.00
Gray	"	2.50
Smalt, blue ordinary	"	.20
Best	"	.30
Chem. pure	"	5.00
Copperas	100 lbs.	.62½
Copper—		
Carbonate	lb.	.18@.20
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide	"	.19@.20
Cream of Tarter—crys.	"	.23½
Granulated	"	.24
Powdered	"	.24
Cryolite	"	.06½
Explosives—		
Blasting powder, A	"	.10@
Blasting powder, B	"	.05@.05½
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite, (40% nitroglycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine for nitro (32 2-10° Be.)	"	.16½
Nitro-Benzole	"	.14
Feldspar—Ground	sh. ton	6.50@7.75
Flint—(See Silica).		
Fluorspar, f. o. b. mines—		
Am. lump, 1st grade	"	7.50
2d gr	"	6.50
Gravel	"	6.00
Crushed	"	5.75
Ground, ex. fine	"	19.00
2d gr.	"	15.00
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Ganister Rock	lg. ton.	6.50
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	8.00
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground.		
American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼@.01¾
True	"	.04
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.06½@.07½
Com'l, broken	"	.06@.07
White, gran	"	.07½@.08
Nitrate, com'l	"	.00½@.06¾
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.90
Finishing	"	1.00
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.25
German (85%)	"	12.00
Calcined, 600° C. (Greece)	"	15.00
1,000° C. (Greece)	"	18.50
3,000° F. (Greece)	"	21.00
Domestic, soft	sh. ton	12.00@15.00
Bricks, all magnesite	M.	185 00
Magnesite and chrome	"	226.00
Magnesium—		
Metallic, ingots (Ger)	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate, light, fine pd	lb.	.03¾@.04
Blocks	"	.06@.09
Chloride, com'l	"	01¾
Fused	"	.20
Nitrate	"	60
Manganese—Crude, pow'd 70@75% binoxide	"	.02½@.03¼
Manganese—	Cust. Meas.	Price.
75@85% binoxide	lb.	.01¼@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.22@.22½
Marble—Flour	sh. ton	5.50@8.00
Mercury—		
Bichloride	lb.	.59@.60
Bisulphate	"	.41
Mica—N. Y. gr'nd, coarse	"	.05
Fine	"	.08
Sheets, 1½x3 in	"	.60
8x10 in	"	13.00
Mineral Wool—		
Slag, ordinary	100 lbs.	.90
Selected	"	1.40
Extra	"	3.00
Rock, ordinary	sh. ton	32.00
Selected	100 lbs.	2.50
Extra	"	5.00
Monazite—62%	sh. ton	140.00
Nickel—Oxide, bl'k No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—		
Black, reduced 29 gr.:		
25@30 cold test	gal.	.10½@.11
15, cold test	"	.11½@.12
Zero	"	.12½@.13½
Summer	"	.10@.10½
Cylinder, dark steam ref	"	.09½@.14½
Dark filtered	"	.12½@.17½
Light filtered	"	.14½@.17
Extra cold test	"	.22½@.26½
Gasolene, 86° @90°	"	.16@.18
Neutral filtered, lemon, 33@34 gr	"	.14½@.20
White, 33@34 gr	"	.22½@.24½
Wool grade, 32 gr	"	.12½@.15½
Naphtha, 62°	"	.12¾
Deodorized, 76°	"	.13¾
Linseed, domestic raw	"	.44
Boiled	"	.46
Calcutta, raw	"	.65
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—Foreign	"	.08
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome green, common	"	.05@.06
Extra	"	.12@.15
Chem. pure	"	.19@.25
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd	"	.06@.06½
English flake	"	.08@.08½
Metallic, brown	sh. ton	16.00@20.00
Red	"	16.00@20.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾@.05
French, washed	"	.01¼@.02½
Orange mineral, Am	"	.07¾@.08
Foreign, as to make	"	.09@.10¾
Paris green, pure	"	.11@.12
Red lead, American	"	.06@.06½
Foreign	"	.08@.08¼
Shellac, "D. C."	"	.26
Native	"	'16
Turpentine, spirits	gal.	.44½@.45
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.10
Quicksilver	"	.64@.65
Chinese	"	.80@.90
English, imported	"	.67
White lead, Am., dry	"	.05½@.05¾
In oil	"	.06@.06½
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.45
Gilders	"	.50
Zinc white, Am., ex. dry	lb.	.05¾@.06
American, red seal	"	.07½@.08
Green seal	"	.08@.08½
Foreign, red seal, dry	"	.07¾@.08¾
Green seal, dry	"	.08¾@.09¾
Foreign, in oil	"	.10½@.11¾
Plumbago—		
Am. lump, f. o. b. Providence, R. I.	sh. ton	8.00
Am. pulv., f. o. b. Providence, R. I.	"	30.00
German, lump	100 lbs.	1.50
Pulverized	"	2.00
Ceylon, pulv. common	lb	.04½
Best	"	.06@.10
Italian, pulv	"	.01¼
Potash—Caustic, ord	"	.05
Elect. (90%)	"	.06@.07
Potassium—		
Metallic, in balls (Ger)	kg.	17.85
Bicarbonate cryst	lb.	.08½
Powdered or gran	"	.12
Bichromate	"	.09¾
Bromide	"	.46@.47
Carbonate	"	.02¾@.03½
Chromate	"	.35
Cyanide (98@99%)	"	.28@.29
Ferro-cyanide	"	.19@.20
Iodide	"	2.15
Permanganate, pure cr.	"	.14@.15
Prussiate, yellow	"	.19¼@.19½
Red	"	.37@.38
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—Common	bbl.	$1.25
Best	"	4.10
Salt—N.Y. com. fine abt. 380 lbs	bbl.	.70
N. Y. agricultural	sh. ton	1.50
N. Y. coarse	"	2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.50
Refined	"	4.25@5.50
Samarskite	lb.	1.00
Silica—Best foreign	lg. ton	10.00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.41
Oxide	"	.85@1.10
Sodium—Metallic	lb.	.07¾
Acetate, com'l	"	.03¾@.04
Bichromate	"	.07
Bromide	"	.49@.50
Chlorate, com'l	"	.09¾@.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07½@.07¾
Peroxide	"	.45
Phosphate	"	.03
Triphosphate	"	.04
Silicate, conc	"	.01@.01½
Sulphate, gran., puri'd	"	.03
Sulphide	100 lbs.	1.75
Sulphite	lb.	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.07½
Sulphur—Roll	100 lbs.	1.70
Flour	"	1.80@1.85
Flowers, sublimed	"	2.00
Talc—N. C. No. 1	sh. ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French	100 lbs.	1.25@1.50
Italian	"	1.50@2.00
Tar—Coal	bbl.	3.00
Tin—Chloride	lb.	.13@.15
Crystals	"	.24@.26
Muriate, com'l	"	.09
Oxide, white, ch. pure	"	.48@.50
Uranium—Oxide	"	1.80@3.00
Zinc—Metallic, ch. pure	"	.09@.10
Carbonate	"	.15
Chloride	"	.06@.08
Dust	"	.07@.07¼
Sulphate	"	.02½

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	21.00
Chromium—Fused	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.21
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	9.52
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm.	4.05
Iridium—	"	2.38
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol 95%	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.95
Palladium	"	.95
Rhodium	"	2.87
Rubidium—Pure	"	4.76
Ruthenium—Pure powd	"	2.38
Selenium—Com'l powder	kg	30.94
Sublimed powder	"	40.46
Sticks	"	33.32
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	5.95
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	23.80
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	5.00@5.50
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused	100 grms.	22.80
Powder, 95@98%	kg.	1.90
Chem. pure	"	6.42
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to Oct. 26th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.